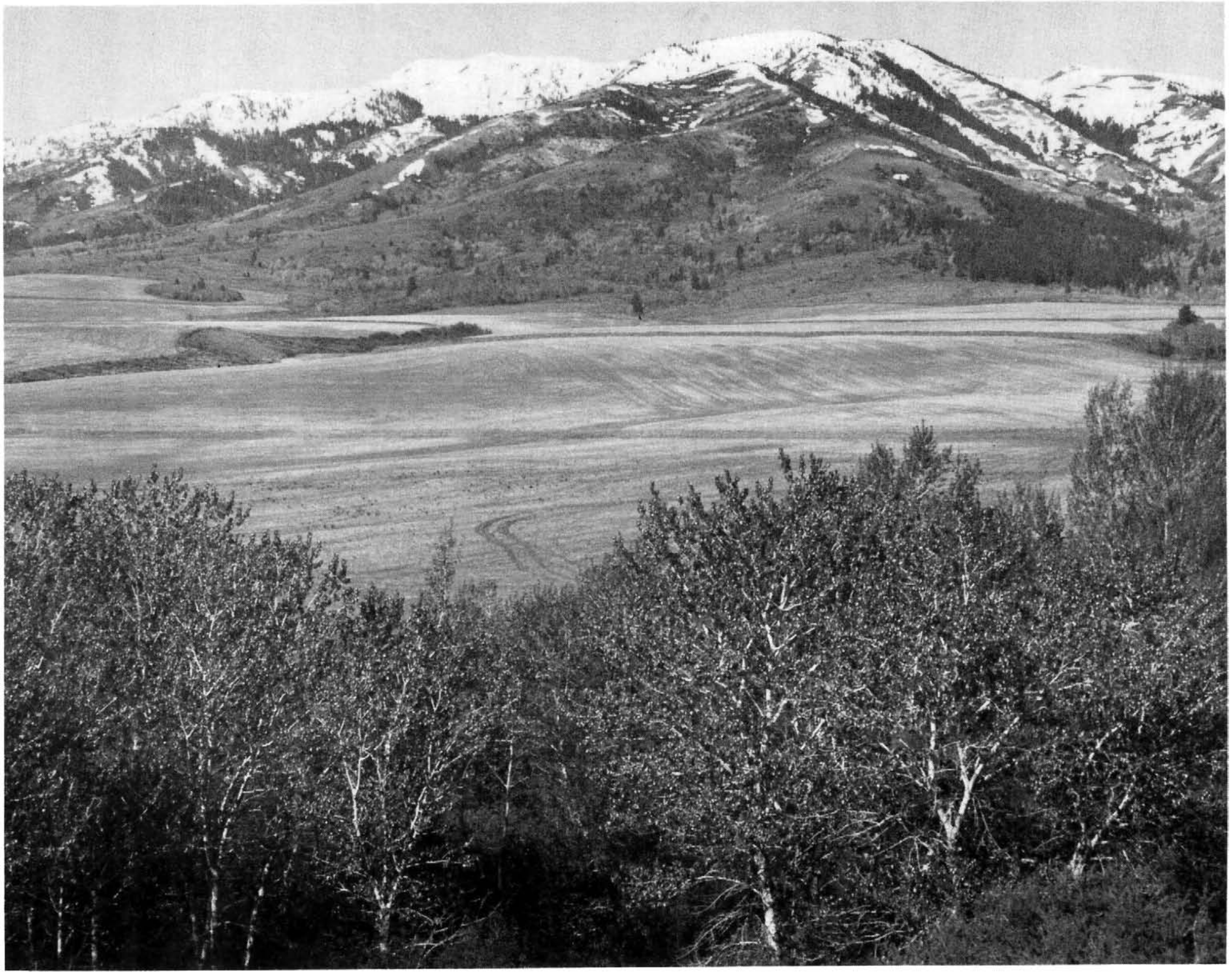
United States
Department of
Agriculture

Soil
Conservation
Service

In cooperation with
United States Department
of the Interior,
Bureau of Land Management;
University of Idaho,
College of Agriculture;
and Idaho Soil
Conservation Commission

Soil Survey of Bannock County Area, Idaho,

Parts of Bannock and Power Counties



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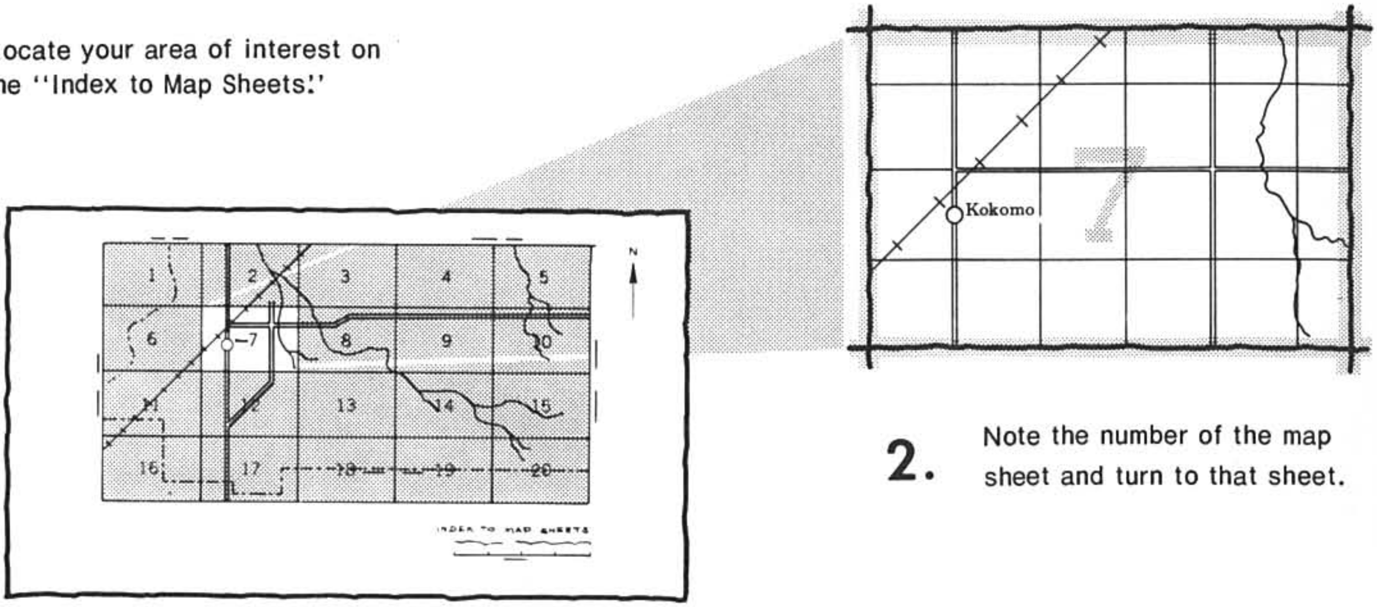

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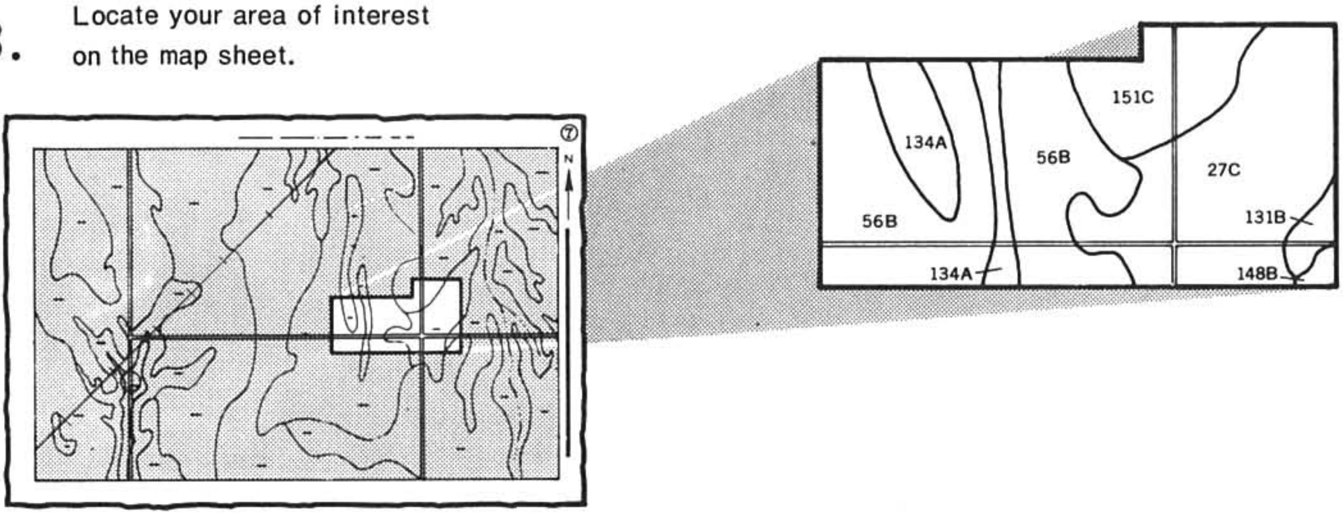

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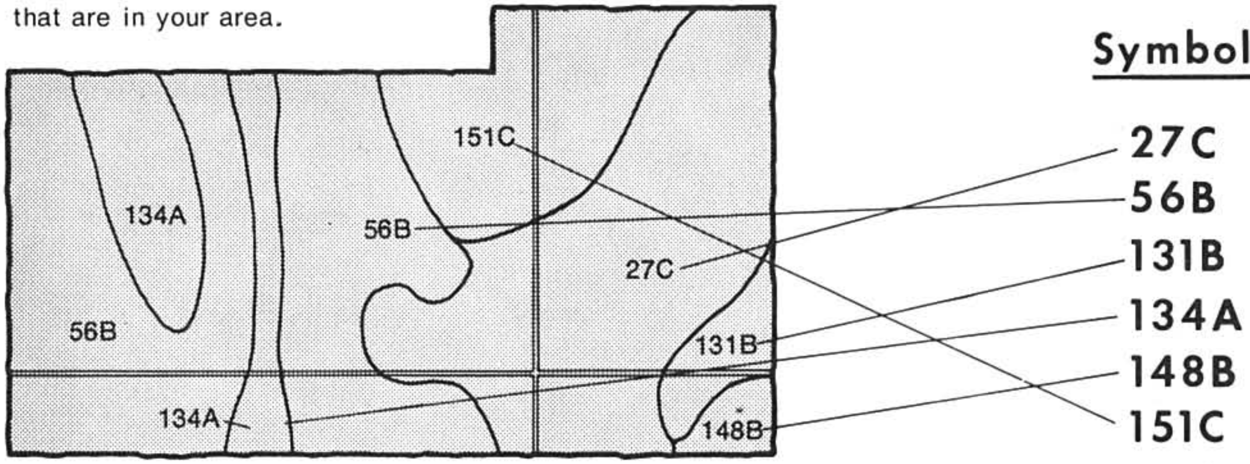

Symbols

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THIS SOIL SURVEY

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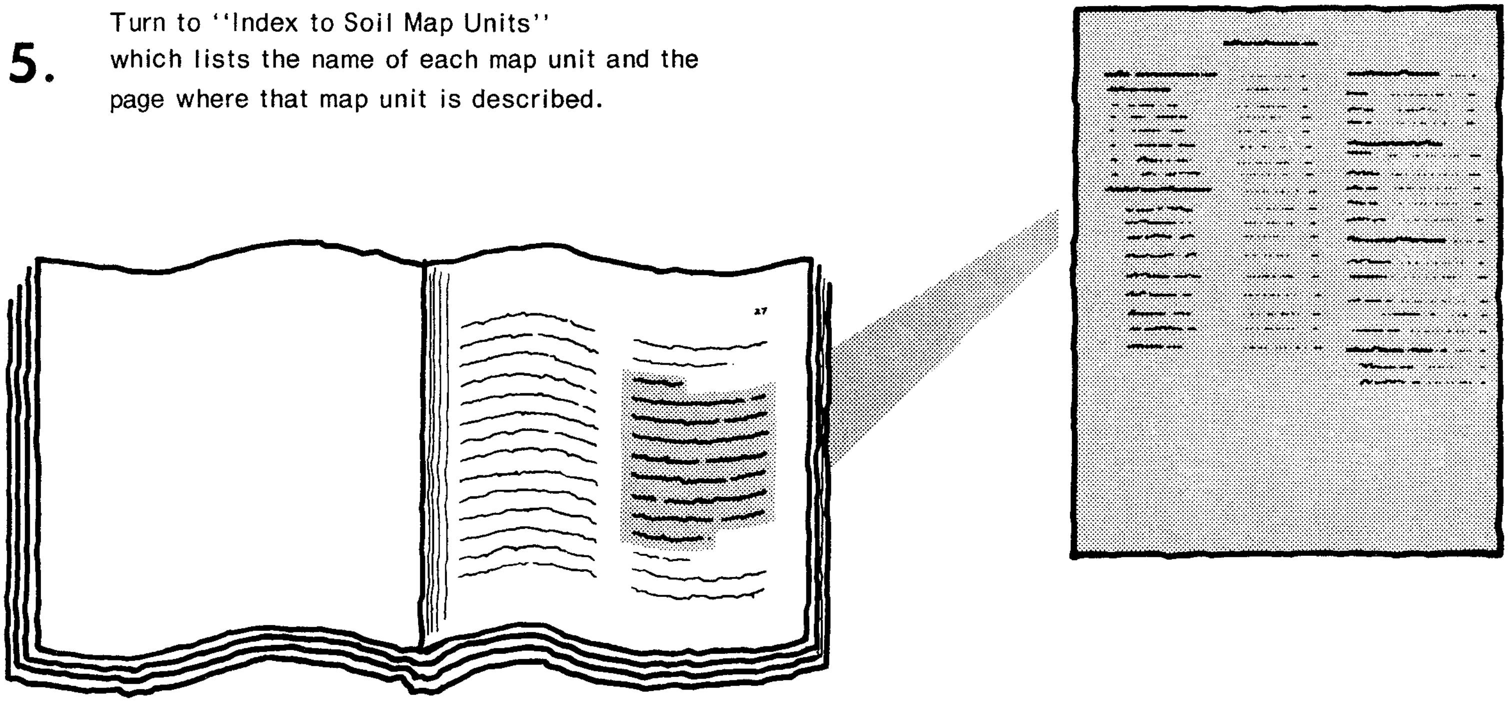

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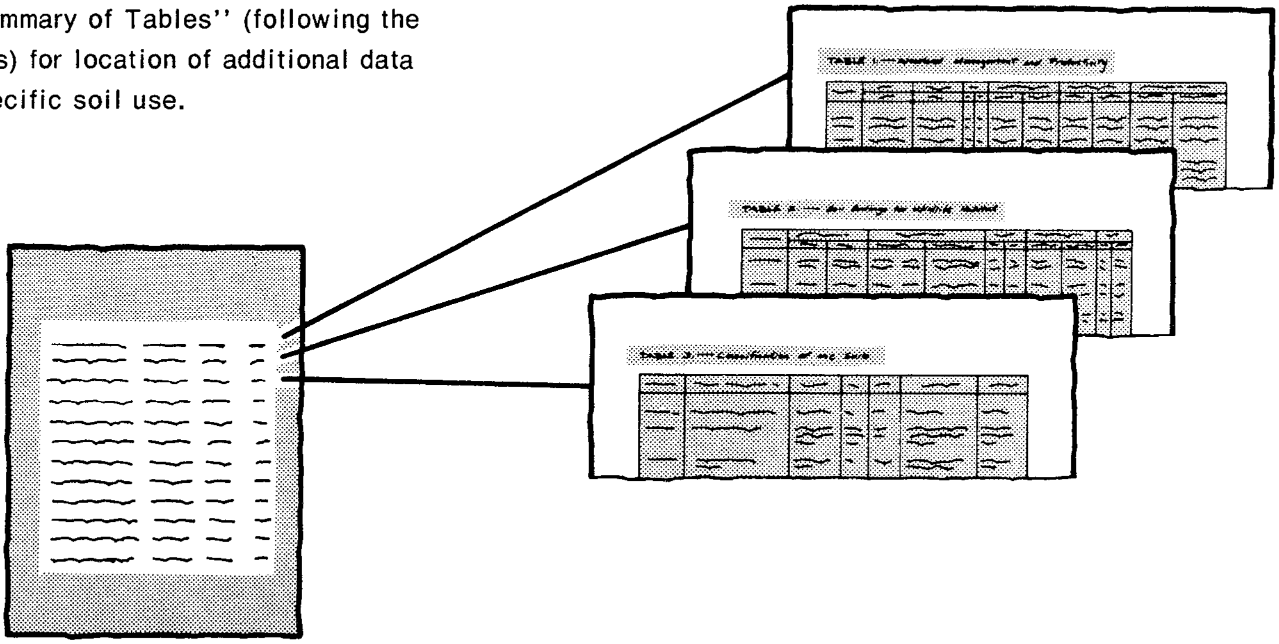

7. Consult ''Contents'' for parts of the publication that will meet your specific needs. This survey contains useful information for farmers or ranchers, foresters or agronomists; for planners, community decision makers, engineers, developers, builders, or homebuyers; for conservationists, recreationists, teachers, or students; for specialists in wildlife management, waste disposal, or pollution control.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other federal agencies, state agencies including the Agricultural Experiment Stations, and local agencies. The Soil Conservation Service has leadership for the federal part of the National Cooperative Soil Survey. In line with Department of Agriculture policies, benefits of this program are available to all, regardless of race, color, national origin, sex, religion, marital status, or age.

Major fieldwork for this soil survey was completed in 1982. Soil names and descriptions were approved in 1983. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1982. This survey was made cooperatively by the Soil Conservation Service and the United States Department of the Interior, Bureau of Land Management; the University of Idaho, College of Agriculture; and the Idaho Soil Conservation Commission. It is part of the technical assistance furnished to the Portneuf Soil and Water Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

Cover: An area of Lanoak soils in center; Greys and Camelback soils in foreground; and Camelback and Pavohroo soils on mountains in background.

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Issued September 1987

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Foreword

This soil survey contains information that can be used in land-planning programs in Bannock County Area. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to insure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Soil Conservation Service or the Cooperative Extension Service.

Stanley N. Hobson
State Conservationist
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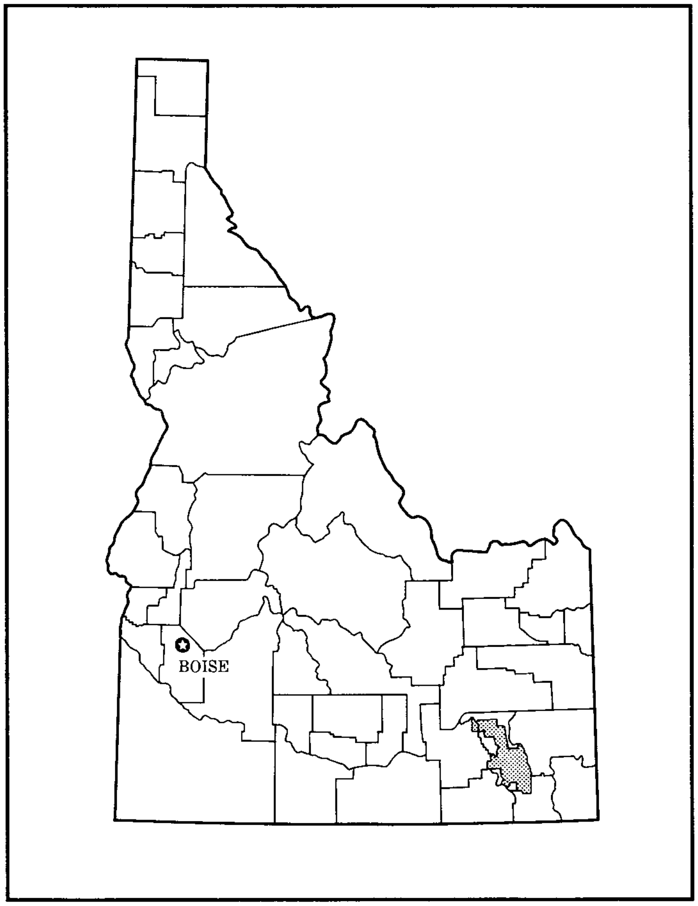

Location of Bannock County Area, Parts of Bannock and Power Counties in Idaho.

Soil Survey of
Bannock County Area, Idaho
Parts of Bannock and Power Counties

By Chad L. McGrath, Soil Conservation Service

Fieldwork by Chad L. McGrath, Theron A. Meyer, III, Harold W. Biggerstaff, and Scott D. Hutchinson, Soil Conservation Service, and John D. Grieve, Rulon W. Winward, and Thomas L. Clark, Idaho Soil Conservation Commission

United States Department of Agriculture, Soil Conservation Service
In cooperation with
United States Department of the Interior, Bureau of Land Management;
University of Idaho, College of Agriculture; and
Idaho Soil Conservation Commission

BANNOCK COUNTY AREA is in the southeastern part of Idaho. It includes all of Bannock County, except contiguous parts of the Caribou National Forest and the Fort Hall Indian Reservation. It also includes a small part of Power County, west of Pocatello. The total area is 504,610 acres, or about 788 square miles. Pocatello, the county seat of Bannock County, had a population of 46,340 in 1980.

The survey area consists of generally north-south trending mountain ranges and valleys. The Bannock Range is in the western part of the area, the Pocatello Range is in the north-central part, and the Portneuf Range is in the eastern part. The Portneuf River and Marsh Creek are the major drainageways in the area. The Portneuf River enters the survey area in the northeastern part and crosses the northern part. It exits the survey area in the northwestern corner. The valley of the Portneuf River is relatively narrow except in the northwestern part of the survey area, where it opens onto the Snake River Plain at Pocatello. Marsh Creek Valley is a very broad valley extending through the central part of the survey area. It is typified by deeply dissected and truncated coalesced fan terraces on either side of the valley.

The lowest point in the survey area, which is about 4,400 feet, is northwest of Pocatello, where the Portneuf River exits the survey area. The highest point in the survey area is Sedgwick Peak, which is about 9,160 feet and is in the southeastern part of the area.

This soil survey was completed to provide soil resource data for long-range planning and development, farm and ranch planning, woodland and rangeland management, urban planning and development, and many other uses. The more intensively used and managed cropland and urban areas were mapped in more detail than the less intensively used and managed woodland and rangeland; however, the map units were constructed to try to meet the present and anticipated needs of the land users and managers.

An older survey, "Soil Survey of the Portneuf Area, Idaho," was published in 1921 (*9*). This earlier survey covers most of the present survey. The present survey, however, updates the earlier survey and provides additional information and larger maps that show the soils in greater detail.

Descriptions, names, and delineations of soils in this soil survey do not fully agree with those on soil maps for adjacent survey areas. Differences are the result of better knowledge of soils, modifications in series concepts, intensity of mapping, or the extent of soils within the survey.

General Nature of the Survey Area

This section gives general information concerning the survey area. It discusses history and development, natural resources, farming, and climate.

History and Development

Routes through the Rocky Mountains were important from the very beginning of this nation's westward expansion. Trails and eventually roads, highways, and railroads were constructed along natural routes such as the Portneuf and Marsh Valleys.

In the early 1800's, trappers found a wealth of fur-bearing animals along the Portneuf River and Marsh Creek and their tributaries. This led Nathaniel Wyeth to build a trading post in 1834. The trading post, called Fort Hall, was located about 12 miles northwest of the present site of Pocatello. By the 1840's, the fur trade began to decline; however, Fort Hall became an important way station for settlers following the Oregon Trail.

While the emigrants were moving westward, mining activity in central and northern Idaho and in Montana also brought increased traffic through the area. By the 1860's, Mormon settlers were establishing farms and ranches in the southern part of what was to become Bannock County.

With all the commercial activity that was taking place to the north, Mormon leaders in Salt Lake City felt that a railroad to the area could be built. In 1872, construction of the Utah Northern Railroad was begun. The cost and labor for the railroad were shared by the people living in the areas where the track was laid in Utah. The system was not feasible in the sparsely settled Idaho regions, and construction was abandoned.

In 1878, Jay Gould and his Union Pacific associates refinanced the Utah Northern, renamed it the Utah and Northern Railroad, and continued laying track up Marsh Valley and Portneuf Valley to Pocatello.

In 1881, work began on the Oregon Short Line Railroad from Granger, Wyoming, to Huntington, Oregon. This railroad also followed the Portneuf Valley through the area to Pocatello. With the two railroads, Pocatello began to grow and prosper and became a railroad center, which it has remained ever since. Farmers and ranchers began to settle in the area because of the ease with which they could ship their crops and livestock. Since then, farming and ranching have become very important industries in the area.

Bannock County was established in March, 1893, when Bingham County was divided. The southern part was called Bannock in honor of the Indians who had inhabited the area. Pocatello is the seat of government and the principal city in the county today. Other cities and communities in the county are Swan Lake, Downey, Virginia, Arimo, McCammon, Lava Hot Springs, and Inkom. Most of these cities and communities started as railroad camps but now are primarily dependent on agriculture.

Transportation facilities are presently supplied by railroads, highways, and an airport at Pocatello. Union Pacific Railroad maintains a regional headquarters at Pocatello. Interstate Highway 15 runs the length of Bannock County from north to south. Interstate Highway 86 connects Interstate 15 with points west at Pocatello. Air passenger and freight service is provided at the Pocatello Municipal Airport.

Because of the good transportation facilities, several major industries have located in and around Pocatello. Idaho State University is also located in Pocatello. These industries along with the university, agriculture, and the railroad continue to be the backbone of the economy of the area.

Natural Resources

Soil and water are the most important natural resources in the survey area. Among the marketable products derived from the soil are the crops produced on the farms; the livestock that graze the rangeland, pastures, and woodland; and the limited amount of timber harvested.

Water in the survey area is used primarily for domestic purposes, livestock, and irrigation. Springs and deep wells supply most of the water used for domestic purposes, although the City of Pocatello does obtain a percentage of its water supply from Mink Creek and Gibson Jack Creek. Perennial streams and spring developments provide adequate supplies of water for livestock in most of the survey area. Irrigation water in the central part of the area is supplied mainly by the Portneuf River and Marsh Creek. The Fort Hall Main Canal, which originates at the Blackfoot Equalizing Reservoir, about 20 miles northeast of Pocatello, supplies most of the irrigation water for the area north of Pocatello. A few deep wells are also used for irrigation, and water from a few of the smaller perennial streams is used to irrigate small areas.

Most of the mining in the area is for the production of sand and gravel. These deposits are plentiful at the lower elevations in the survey area, especially in the Downey, Virginia, Arimo, and Pocatello areas. Limestone is quarried for the only cement plant in Idaho, at Inkom. A small amount of quartzite is quarried southwest of Pocatello to use as flux in the extraction of elemental phosphorus. There has been a considerable amount of metallic ore prospecting, but the ore bodies found have not proven profitable to mine. A very small amount of peat has been mined along Marsh Creek. There are also deposits of volcanic ash that may be suitable for use as abrasives or in the production of cinder blocks.

Farming

The farming and ranching industries in the survey area have flourished since the coming of the railroad. The first settlers were primarily ranchers; however, as these settlers and those that followed found, the soils in the area are quite fertile. They then began to plow up the sagebrush and plant crops. With the development of the tractor and bigger and better machinery, especially shortly before and after World War II, large acreages of rangeland were converted to cropland. The majority of the cropland in the survey area is nonirrigated, with the exception of the area north of Pocatello and some of the areas at lower elevations in the central part of the area.

Wheat, barley, and a small amount of alfalfa hay are the primary crops raised in the nonirrigated areas. Wheat, barley, potatoes, and alfalfa hay are the major crops in the irrigated areas. There is also irrigated meadow hay and pasture along the Marsh Creek bottom. The ranching industry is now primarily centered around beef cattle, although sheep were quite important during the early days of ranching. There are also a number of dairies in the survey area. Most of the farms and ranches in the area have a combination farming and livestock operation.

Most of the nonirrigated cropland in the survey area is gently sloping to moderately steep. As early as 1930, the local farmers could see the erosion and the resultant siltation and increased flooding along the streams as this sloping land was converted from rangeland to cropland. They realized the need for soil and water conservation measures and practices to control the devastating effects of soil erosion. The Portneuf Soil and Water Conservation District was established May 18, 1940. It was the second legal soil conservation district to be formed in Idaho.

Climate

Prepared by the National Climatic Center, Asheville, North Carolina.

The Rocky Mountains partly shield the survey area from strong arctic winds, so winters are generally not too severe, though cold. In summer Pacific Ocean winds are partially blocked; days are hot, but nights are fairly cool. Precipitation, except in mountainous areas, is scant in summer, but in many places it is adequate during the cooler parts of the year for nonirrigated small grain or rangeland. The snowpack accumulation at high elevations supplies irrigation water for intensive agriculture in parts of the lowland.

No weather stations are in the survey area. The weather station for Pocatello is located at the airport, 7 miles west of Pocatello and 3 miles west of the western boundary of the survey area. This station, however, was not chosen because the data from this station would represent only the small part of the survey area from Pocatello north.

The climatic information for the survey area is taken from data collected at Arbon, Idaho. Arbon is 10 miles west of the western boundary of the survey area, in the next major north-south oriented valley. It was selected because the climate is similar to that in most of the survey area.

The climate is extremely variable in the survey area. It is primarily related to changes in elevation. There is also some rain shadow effect created by the variability in relief of the mountain ranges.

The driest and warmest part of the survey area is north of Pocatello. This part is at the lowest elevations in the survey area. The average annual temperature is about 47 degrees F, the average annual precipitation is about 10 inches, and the average frost-free season is about 120 days. With increased elevation, the average annual temperature decreases, the average annual precipitation increases, and the average frost-free season decreases. At the highest elevations in the area, the average annual temperature is about 37 degrees, the average annual precipitation is about 30 inches, and the average frost-free season is less than 50 days.

The information given in the following paragraphs is representative for the intermediate elevations, which include the majority of the nonirrigated cropland in the survey area.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Arbon, Idaho, in the period 1962-79. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter, the average temperature is 25 degrees and the average daily minimum temperature is 16 degrees. The lowest temperature on record, which occurred at Arbon on January 9, 1977, is -28 degrees. In summer, the average temperature is 65 degrees and the average daily maximum temperature is 83 degrees. The highest recorded temperature, which occurred at Arbon on July 19, 1966, is 101 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is 15.6 inches. Of this, 7 inches, or 45 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 5 inches. The heaviest 1-day rainfall during the period of record was 3.2 inches at Arbon on December 23, 1964. Thunderstorms occur on about 25 days each year, and most occur in summer.

The average seasonal snowfall is 69 inches. The greatest snow depth at any one time during the period of record was 30 inches. On an average of 14 days, at least 1 inch of snow is on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 40 percent. Humidity is higher at night, and the average at dawn is about 70 percent. The sun shines 80 percent of the time in summer and 40 percent in winter. The prevailing wind is from the southwest. Average windspeed is highest, 12 miles per hour, in spring.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biologic activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind or segment of the landscape. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landscape, a soil scientist develops a concept or model of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with considerable accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Individual soils on the landscape commonly merge gradually onto one another as their characteristics gradually change. To construct an accurate map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While the soil survey was in progress, samples of some of the soils in the area were collected for laboratory analyses and for engineering tests. Soil scientists interpreted the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils were field tested through observation of the soils in different uses and under different levels of management. Some interpretations were modified to fit local conditions, and some new interpretations were developed to meet local needs. Data were assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management were assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can state with a fairly high degree of probability that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

General Soil Map Units

The general soil map at the back of this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, a map unit consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The soils or miscellaneous areas making up one unit can occur in other units but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils or miscellaneous areas can be identified on the map. Likewise, areas that are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

The general soil map at the back of this survey does not join in all instances with the general soil maps of adjacent survey areas. Differences in the maps have resulted from differences in the occurrence of soil patterns and from recent advances in classification.

The general map units in this survey have been grouped into general kinds of landscape for broad interpretive purposes (figs. 1 and 2). Each of the broad groups and the map units in each group are described in the following pages.

Map Unit Descriptions

Soils on flood plains and low terraces

Two map units are on these landscape positions. They make up about 4 percent of the survey area.

1. Downata-Bear Lake-Tendoy

Very deep, very poorly drained and poorly drained soils that formed in silty alluvium and organic material and are subject to frequent flooding

This map unit is mainly along the major drainageways in the survey area. It is mainly on flood plains and low terraces. Slopes are 0 to 1 percent. Elevation ranges from 4,500 to 5,400 feet. The average annual precipitation is 12 to 16 inches, the average annual air temperature is 41 to 45 degrees F, and the average frost-free season is 80 to 100 days.

This unit makes up about 2 percent of the survey area. It is about 30 percent Downata and similar soils, 25 percent Bear Lake and similar soils, and 10 percent Tendoy and similar soils. The remaining 35 percent is components of minor extent.

Downata soils are on flood plains and low terraces. These soils are very poorly drained. The drainage of the Downata soils has been altered in most areas, changing it to poorly drained. These soils formed in silty alluvium derived from mixed sources. The surface layer is silt loam. Below this to a depth of 60 inches or more is silt loam and silty clay loam.

Bear Lake soils are on flood plains and low terraces. These soils are very poorly drained. The drainage of the Bear Lake soils has been altered in most areas, changing it to poorly drained. These soils formed in silty alluvium derived from mixed sources. The surface layer is silt loam. The subsoil is silt loam or silty clay loam. Below this to a depth of 60 inches or more is silt loam or silty clay loam.

Tendoy soils are on flood plains. These soils are very poorly drained. They formed in organic material derived dominantly from herbaceous plants. The surface is covered with a thin layer of silty alluvium. Below this to a depth of 60 inches or more is organic material.

Of minor extent in this unit are the poorly drained Bear Lake Variant and Inkom soils and the well drained Arbone, Wursten, and Holmes soils. The Arbone, Wursten, and Holmes soils are on higher terraces and are not affected by a high water table or by flooding.

This unit is used mainly for hay and pasture. It is also used for wildlife habitat.

If this unit is used for hay and pasture, the main limitation is seasonal wetness.

This unit is well suited to use as wetland wildlife habitat. The soils in the unit produce food and cover for ducks, geese, herons, sandhill cranes, mink, beaver, and muskrats.

The main limitations of this unit for homesite development are a hazard of flooding and a seasonal high water table and the shrink-swell potential and excess humus of the Tendoy soils. The main limitations of this unit for local roads and streets and for recreational development are a hazard of flooding and a seasonal high water table.

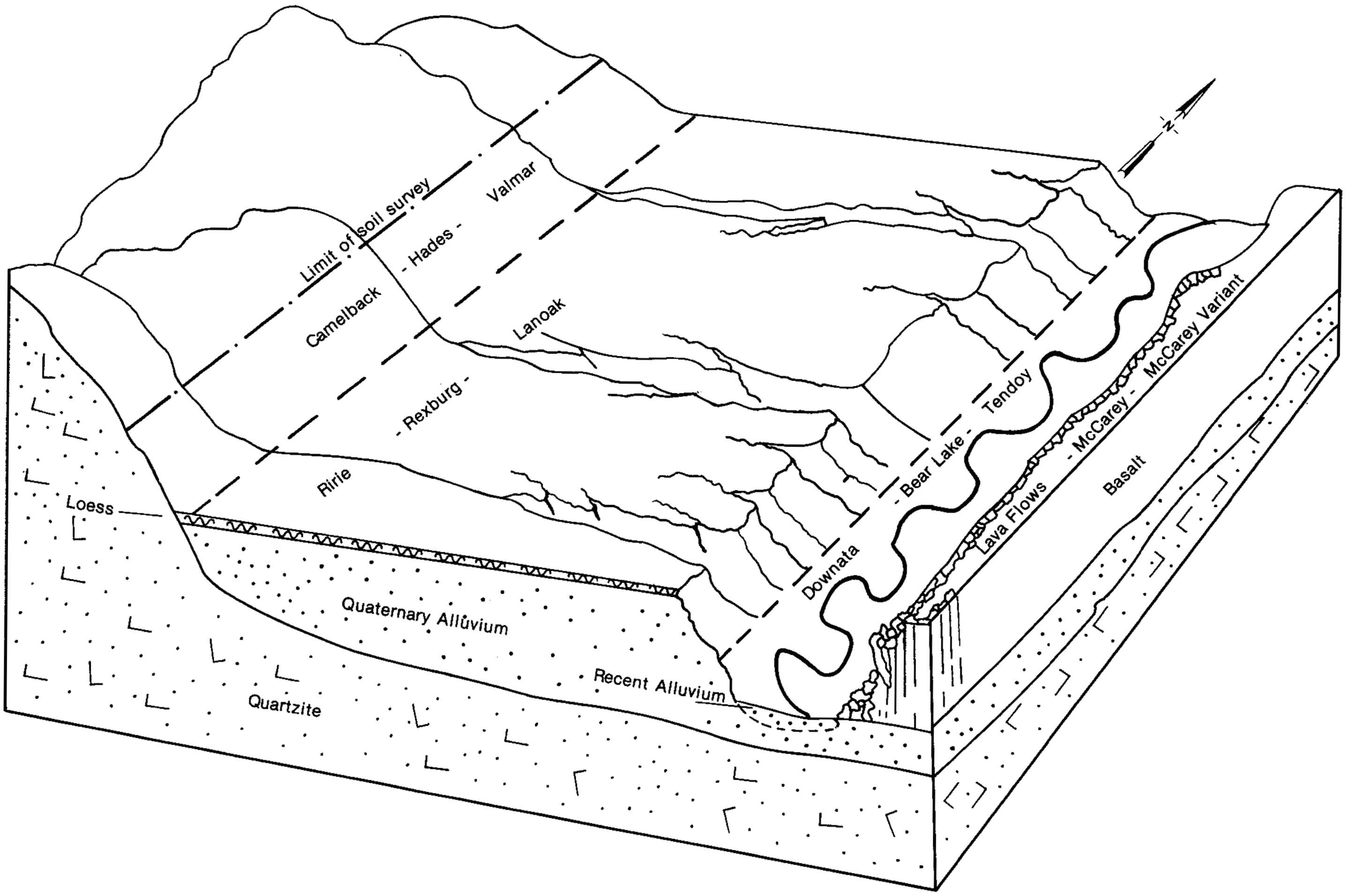

Figure 1.—Cross section of Marsh Valley, west of McCammon, showing relationship between the soils and parent material in general soil map units I, 4, 5, and 6.

2. Inkom-Joevar

Very deep, moderately well drained and well drained soils that formed in silty alluvium

This map unit is primarily along the Portneuf River and Marsh Creek and their tributaries. It is mainly on flood plains and terraces. Slopes are 0 to 3 percent. Elevation ranges from 4,350 to 5,400 feet. The average annual precipitation is 10 to 16 inches, the average annual air temperature is 42 to 48 degrees F, and the average frost-free season is 80 to 120 days.

This unit makes up about 2 percent of the survey area. It is about 45 percent Inkom and similar soils and 30 percent Joevar and similar soils. The remaining 25 percent is components of minor extent.

Inkom soils are on terraces and flood plains. These soils are moderately well drained. The Inkom soils formed under conditions of poor drainage; because of altered drainage, however, these soils are now moderately well drained. They formed in silty alluvium derived from mixed sources. The soils are silt loam throughout.

Joevar soils are on terraces. These soils are well drained. They formed in silty alluvium derived dominantly from loess. The soils are silt loam throughout.

Of minor extent in this unit are the well drained McDole, McDole Variant, Arbone, Holmes, and Wursten soils and the poorly drained Downata and Bear Lake soils. The McDole and McDole Variant soils are along the Portneuf River, near the City of Pocatello. The Arbone, Holmes, and Wursten soils are on terraces and terrace breaks. The Downata and Bear Lake soils are in depressional areas and on low terraces adjacent to streams.

This unit is used mainly for nonirrigated and irrigated crop production. It is also used for wildlife habitat.

The main limitations of this unit for nonirrigated crop production are a hazard of flooding and limited precipitation. The main limitation of this unit for irrigated crop production is a hazard of flooding.

This unit is well suited to use as openland wildlife habitat. The soils in the unit produce food and cover for Hungarian partridge, ring-necked pheasant, meadowlark, cottontail rabbit, fox, and coyote. Clean-till farming practices limit wildlife habitat on this unit.

The main limitation of this unit for homesite development is a hazard of flooding. The main limitations for local roads and streets are a hazard of flooding and frost action. The main limitations for recreational development are a hazard of flooding, a seasonal high water table, and dustiness.

Soils on high terraces

One map unit is on these landscape positions. It makes up about 7 percent of the survey area.

3. Arimo-Downey-Bahem

Very deep, well drained soils that formed in loess and silty alluvium overlying alluvial sand, gravel, cobbles, and stones

This unit is characterized by broad, nearly level to gently sloping terraces bordered by escarpments cut by streams. Slopes are 0 to 8 percent. Elevation ranges from 4,400 to 4,900 feet. The average annual precipitation is 9 to 16 inches, the average annual air temperature is 42 to 49 degrees F, and the average frost-free season is 80 to 130 days.

This unit makes up about 7 percent of the survey area. It is about 20 percent Arimo and similar soils, 20 percent

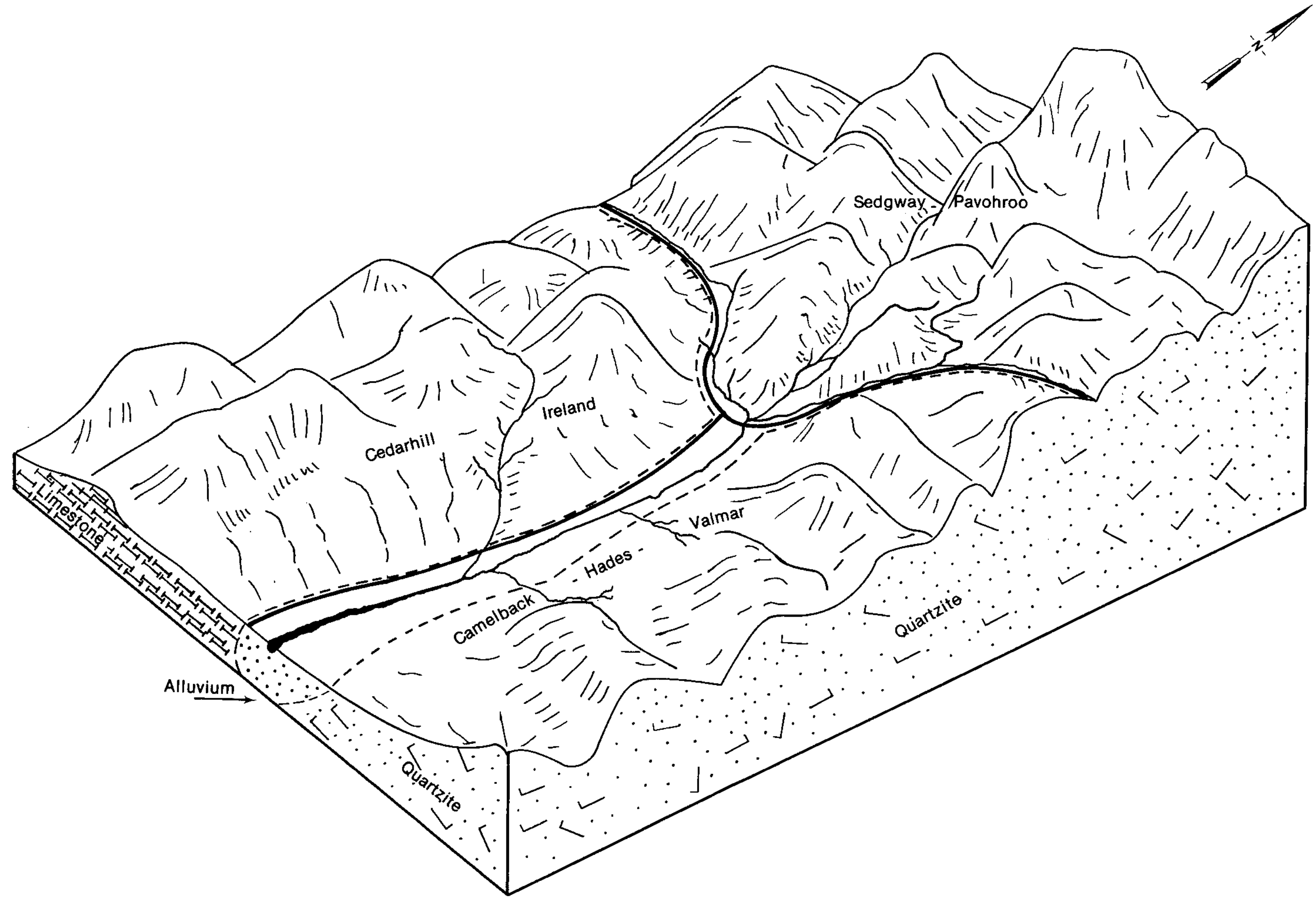

Figure 2.—Relationship between the soils and parent material in general soil map units 6, 7, and 8.

Downey and similar soils, and 10 percent Bahem and similar soils. The remaining 50 percent is components of minor extent.

Arimo soils are on terraces. Sand and gravel are at a depth of 20 to 40 inches. The soils formed in loess and silty alluvium overlying alluvial sand and gravel of mixed mineralogy. The soils are silt loam to a depth of 33 inches. Below this to a depth of 60 inches or more is extremely gravelly coarse sand.

Downey soils are on terraces. Sand and gravel are at a depth of 12 to 20 inches. The soils formed in silty alluvium overlying alluvial sand and gravel of mixed mineralogy. The soils are silt loam to a depth of 17 inches. Below this to a depth of 60 inches or more is extremely gravelly coarse sand.

Bahem soils are on terraces. Sand, gravel, cobbles, and stones are at a depth of 40 to 60 inches. The soils formed in silty alluvium overlying flood-deposited sand, gravel, cobbles, and stones. The soils are silt loam to a depth of 49 inches. Below this to a depth of 60 inches or more is extremely cobbly sand.

Of minor extent in this unit are the very deep Broxon, Broncho, Hondoho, and Wursten soils and Urban land. Urban land consists of areas that are largely covered by concrete, asphalt, buildings, or other impervious surfaces that obscure the soils so that identification is not feasible. The Broxon soils are on terraces in and north of Pocatello. The Broncho soils are on terrace escarpments north of Pocatello. The Hondoho and Wursten soils are on terrace escarpments in the Downey area. The Urban land is within the city limits of Pocatello and Chubbuck.

This unit is used for irrigated and nonirrigated crops, livestock grazing, wildlife habitat, and urban and homesite development.

The main limitations of this unit for irrigated crop production are the droughtiness of the Downey soils and the hazard of water erosion. The main limitations for nonirrigated crop production are the droughtiness of the Downey soils, low precipitation, and the hazard of water erosion.

This unit is well suited to livestock grazing. It has few limitations.

This unit is well suited to use as openland and rangeland wildlife habitat. The soils in the unit that are farmed produce food and cover for Hungarian partridge, ring-necked pheasant, meadowlark, cottontail rabbit, fox, and coyote. Clean-till farming practices limit openland wildlife habitat on this unit. The natural vegetation produced on the unit provides food and cover for mule deer, sage grouse, coyote, sharp-tailed grouse, Hungarian partridge, and jackrabbits.

If this unit is used for homesite and urban development, the main limitations are poor filter material for septic tank absorption fields and the hazard of seepage from sewage lagoons and sanitary landfills. The main limitation of this unit for local roads and streets is the hazard of frost action. The main limitation for recreational development is a dusty surface layer.

Lava flows and soils on basalt flows

One map unit is on these landscape positions. It makes up about 2 percent of the survey area.

4. Lava flows-McCarey-McCarey Variant

Lava flows, and moderately deep and shallow, well drained soils that formed in loess, silty alluvium, and material weathered from basalt

This unit is characterized by an undulating basalt flow with many exposed areas of Lava flows. Slopes are 1 to 8 percent. Elevation ranges from 4,500 to 4,800 feet. The average annual precipitation is 11 to 16 inches, the average annual air temperature is 43 to 48 degrees F, and the average frost-free season is 80 to 125 days.

This unit makes up about 2 percent of the survey area. It is about 30 percent Lava flows, 20 percent McCarey and similar soils, and 15 percent McCarey Variant and similar soils. The remaining 35 percent is components of minor extent.

Lava flows consist of exposed basalt. They are highly fractured and have many crevices. Vegetation is mostly moss and lichens. The material in some crevices supports serviceberry, mountain big sagebrush, Rocky Mountain maple, currant, and antelope bitterbrush.

McCarey soils are on basalt flows. These soils are moderately deep. They formed in loess and silty alluvium and in material weathered from basalt. The soils are silt loam throughout. Unweathered basalt is at a depth of 20 to 40 inches.

McCarey Variant soils are on basalt flows. These soils are shallow. The soils formed in loess and silty alluvium and in material weathered from basalt. The surface layer is extremely stony silt loam. The subsoil is very stony silt loam. Unweathered basalt is at a depth of 10 to 20 inches.

Of minor extent in this unit are very deep Arbone soils, moderately deep Portino soils, shallow Thornock soils, Rubble land, and vertical cliffs. The Arbone soils are in concave areas and on terraces adjacent to the basalt flow. The Portino and Thornock soils are on the basalt flow, south of the city of Pocatello. The Rubble land and vertical cliffs are mainly along the escarpments that border the basalt flow, along Marsh Creek and the Portneuf River.

Most areas of this unit are used for livestock grazing and wildlife habitat. A few areas are used for irrigated and nonirrigated crop production and for homesite development.

If this unit is used for livestock grazing, the main limitations are the extremely stony surface layer of the McCarey Variant soils and the areas of Lava flows.

This unit is suited to rangeland wildlife habitat. The natural vegetation produced by the soils in this unit provides food and cover for mule deer, sage grouse, coyote, and sharp-tailed grouse.

This unit is poorly suited to use as irrigated or nonirrigated cropland. It is limited mainly by the areas of Lava flows and the extremely stony surface layer of the McCarey Variant soils.

This unit is poorly suited to homesite development. It is limited mainly by the areas of Lava flows, the extremely stony surface layer of the McCarey Variant soils, and the depth to bedrock. The main limitations for local roads and streets are the areas of Lava flows, the extremely stony surface layer of the McCarey Variant soils, depth to bedrock, and the hazard of frost action. The main limitations for recreational development are the areas of Lava flows, the extremely stony surface layer of the McCarey Variant soils, depth to bedrock, and the dusty surface layer of the McCarey soils.

Soils on fan terraces and foothills

One map unit is on these landscape positions. It makes up about 35 percent of the survey area.

5. Ririe-Rexburg-Lanoak

Very deep, well drained soils that formed in loess and in silty alluvium derived from loess

Areas of this map unit are throughout the survey area. This unit is characterized by rounded foothills and truncated coalesced fan terraces that have very deeply dissected drainageways. Slopes are 1 to 50 percent. Elevation ranges from 4,400 to 6,600 feet. The average annual precipitation is 10 to 18 inches, the average annual air temperature is 41 to 51 degrees F, and the average frost-free season is 75 to 125 days.

This unit makes up about 35 percent of the survey area. It is about 30 percent Ririe and similar soils, 15 percent Rexburg and similar soils, and 15 percent Lanoak and similar soils. The remaining 40 percent is components of minor extent.

Ririe soils are on foothills and fan terraces. They formed in loess and silty alluvium derived from loess. The soils are silt loam to a depth of 60 inches or more.

Rexburg soils are on foothills and fan terraces. They formed in loess and silty alluvium derived from loess. The soils are silt loam to a depth of 60 inches or more.

Lanoak soils are on north-facing side slopes of the higher foothills and fan terraces. They formed in loess and silty alluvium derived from loess. The soils are silt loam to a depth of 60 inches or more.

Of minor extent in this unit are the Pocatello, Bancroft, Joes, Watercanyon, Manila, Greys, Hondoho, Arbone, Broncho Variant, Coalbank, and Cedarhill soils; the moderately well drained Oxford and Banida soils; and the moderately deep Trailcreek soils. The Pocatello soils are on foothills and fan terraces near the city of Pocatello. The Broncho Variant soils are on terrace escarpments near the city of Pocatello. Bancroft soils are on foothills and fan terraces in the more moist areas of the unit. Joes soils are on fan terraces west of the city of Arimo. Watercanyon soils are on south- and west-facing side slopes and ridgetops. Manila soils are on foothills and fan terraces east of the city of Downey. Greys soils are in the higher, cooler, more moist areas. The Hondoho and Arbone soils are on terrace escarpments below the Ririe and Rexburg soils. Cedarhill soils are on south- and west-facing side slopes of foothills. The Oxford and Banida soils are on lake terraces in the Swan Lake area. The Coalbank and Trailcreek soils are associated with outcrops of volcanic ash.

Most areas of this unit are used for nonirrigated crop production and openland wildlife habitat. A few areas are used for irrigated crop production, livestock grazing, and homesite and urban development.

The main limitations of this unit for nonirrigated crop production are the hazard of water erosion, limited precipitation in the drier areas of the unit, and a limited frost-free season in the cooler areas.

The soils in this unit produce food and cover for Hungarian partridge, ring-necked pheasant, mourning dove, meadowlark, cottontail rabbit, fox, and coyote. Clean-till farming practices limit openland wildlife habitat.

If this unit is used for irrigated crop production, the main limitations are the hazard of water erosion and a limited frost-free season at the higher elevations. This unit is well suited to livestock grazing.

The main limitations of this unit for homesite, urban, and recreational development are slope, a hazard of water erosion, and dustiness. The main limitations of this unit for local roads and streets are slope and the hazard of frost action.

Soils on foothills and mountains

Three map units are on these landscape positions. They make up about 52 percent of the survey area.

6. Camelback-Hades-Valmar

Very deep to moderately deep, well drained, noncalcareous soils that formed in alluvium, colluvium, and residuum derived from quartzite and related rock

Areas of this map unit are throughout the survey area. This unit is characterized by dissected drainageways, small perennial and intermittent streams, and some areas of Rock outcrop. Slopes are 5 to 65 percent. Elevation ranges from 5,000 to 7,000 feet. The average annual precipitation is 16 to 20 inches, the average annual air temperature is 39 to 43 degrees F, and the average frost-free season is 60 to 90 days.

This unit makes up about 22 percent of the survey area. It is about 25 percent Camelback and similar soils, 15 percent Hades and similar soils, and 15 percent Valmar and similar soils. The remaining 45 percent is components of minor extent.

Camelback soils are on side slopes of mountains and foothills. These soils are deep and very deep. They formed in alluvium and colluvium derived dominantly from quartzite and related rock. The surface layer is gravelly silt loam. The subsoil is extremely cobbly silt loam. Quartzite is at a depth of 42 inches. Unweathered bedrock is at a depth of 40 to 60 inches.

Hades soils are on foot slopes and in concave areas on side slopes of mountains and foothills. These soils are very deep. They formed in alluvium derived dominantly from quartzite and related rock. The surface layer is gravelly silt loam. The subsoil is gravelly silt loam and gravelly silty clay loam to a depth of 60 inches.

Valmar soils are on ridges and convex side slopes of foothills and mountains. These soils are moderately deep. They formed in alluvium, colluvium, and residuum derived dominantly from quartzite and related rock. The surface layer is very cobbly silt loam. The subsoil is very cobbly silt loam and extremely stony silt loam. Quartzite is at a depth of 24 inches. Bedrock is at a depth of 20 to 40 inches.

Of minor extent in this unit are the very deep Lanoak, Moonlight, Greys, Broadhead, Yago, Pavohroo, Cedarhill, Holmes, and Coalbank soils; the moderately deep Trailcreek and Lonigan soils; the shallow Swanner soils; and the somewhat poorly drained Enochville and Enochville Variant soils. The Lanoak soils are on loess-covered side slopes and foot slopes of mountains and foothills. The Moonlight and Pavohroo soils are on concave, north- and east-facing side slopes. The Greys soils are on loess-covered, concave, north- and east-facing side slopes. The Broadhead and Yago soils are on foot slopes and fan terraces. The calcareous Cedarhill soils are associated with limestone outcrops. The Holmes, Enochville, and Enochville Variant soils are on stream terraces. The Coalbank, Trailcreek, and Lonigan soils are associated with volcanic ash outcrops. The Swanner soils are associated with andesite outcrops west of the City of Pocatello.

Most areas of this unit are used for livestock grazing, rangeland wildlife habitat, and watershed. A few areas are used for homesite and recreational development.

This unit is well suited to livestock grazing and rangeland wildlife habitat. The natural vegetation produced by the soils in this unit provide food and cover for mule deer, sage grouse, sharp-tailed grouse, meadowlark, jackrabbit, and coyote.

The main limitations of this unit for homesite and recreational development are slope, stones, and depth to bedrock. The main limitations for local roads and streets are slope, the hazard of frost action, and stones.

7. Cedarhill-Ireland

Very deep and moderately deep, well drained, calcareous soils that formed in alluvium, colluvium, and residuum derived from limestone, dolomite, and related rock

Areas of this map unit are throughout the survey area. This unit is characterized by dissected drainageways, small perennial and intermittent streams, and some areas of Rock outcrop. Slopes are 12 to 60 percent. Elevation ranges from 5,000 to 7,000 feet. The average annual precipitation is 13 to 18 inches, the average annual air temperature is 41 to 45 degrees F, and the average frost-free season is 70 to 100 days.

This unit makes up about 18 percent of the survey area. It is about 40 percent Cedarhill and similar soils and 15 percent Ireland and similar soils. The remaining 45 percent is components of minor extent.

Cedarhill soils are on side slopes of mountains and foothills. These soils are very deep. They formed in alluvium and colluvium derived dominantly from limestone and related rock. The surface layer is very cobbly silt loam. Below this to a depth of 60 inches or more are very cobbly silt loam and very cobbly loam.

Ireland soils are on ridges and convex side slopes of mountains and foothills. These soils are moderately deep. The soils formed in alluvium, colluvium, and residuum derived dominantly from dolomite, limestone, and related rock. The surface layer is extremely stony silt loam. The subsoil is very stony silt loam and extremely stony silt loam. Interbedded dolomite and limestone are at a depth of 30 inches. Depth to bedrock is 20 to 40 inches.

Of minor extent in this unit are very deep Ricrest, Hondoho, Coalbank, Moonlight, Arbone, and Hades soils; deep Camelback soils; and moderately deep Ridgecrest, Lonigan, and Trailcreek soils. The Ricrest, Hondoho, and Arbone soils are on foot slopes and in concave areas on side slopes of mountains and foothills. The Coalbank, Lonigan, and Trailcreek soils are associated with volcanic ash outcrops. The Moonlight soils are on concave, north- and east-facing side slopes. The Hades and Camelback soils are on north- and east-facing side slopes and are associated with quartzite. The Ridgecrest soils are on ridges and convex side slopes.

Most areas of this unit are used for livestock grazing, rangeland wildlife habitat, and watershed. A few areas are used for homesite and recreational development.

This unit is well suited to livestock grazing and rangeland wildlife habitat. The natural vegetation produced by the soils in this unit provides food and cover for mule deer, sage grouse, sharp-tailed grouse, meadowlark, Hungarian partridge, jackrabbit, and coyote.

The main limitations of this unit for homesite and recreational development are slope, stones, and depth to bedrock. The main limitations for local roads and streets are slope and stones.

8. Sedgway-Pavohroo-Harkness

Very deep, well drained, cold soils that formed in alluvium and colluvium derived from sedimentary and metasedimentary rock and in alluvium derived from loess

Areas of this map unit are in the west-central, northeastern, and east-central parts of the survey area. This unit is characterized by dissected drainageways, small perennial and intermittent streams, and some areas of Rock outcrop. Slopes are 8 to 60 percent. Elevation ranges from 5,500 to 9,100 feet. The average annual precipitation is 22 to 30 inches, the average annual air temperature is 36 to 41 degrees F, and the average frost-free season is less than 50 days.

This unit makes up about 12 percent of the survey area. It is about 25 percent Sedgway and similar soils, 25 percent Pavohroo and similar soils, and 20 percent Harkness and similar soils. The remaining 30 percent is components of minor extent.

Sedgway soils are on side slopes of mountains. They formed in alluvium and colluvium derived dominantly from sedimentary and metasedimentary rock. The surface layer is gravelly silt loam in the upper part and very cobbly silt loam in the lower part. The subsurface layer is very cobbly loam. The subsoil is very cobbly clay loam to a depth of 60 inches or more.

Pavohroo soils are on concave side slopes and on foot slopes of mountains. They formed in alluvium and colluvium derived from sedimentary and metasedimentary rock and in alluvium derived from loess. The surface layer is silt loam. The subsoil is stony loam to a depth of 60 inches or more.

Harkness soils are on mountainsides. They formed in mixed alluvium derived from a variety of sedimentary and metasedimentary rock, dominantly sandstone and quartzite. The surface layer is silt loam. The subsurface layer is very cobbly loam. The subsoil is silty clay loam to a depth of 60 inches or more.

Of minor extent in this unit are very deep Greys, Toponce, Mikesell, Beaverdam, Scout Variant, Moonlight, Broadhead, and Camelback Variant soils; deep Camelback soils; moderately deep Dateman, Ireland, Valmar, and Valmar Variant soils; and somewhat poorly drained Enochville and Enochville Variant soils. The Greys and Toponce soils are on foot slopes of mountains. The Mikesell and Beaverdam soils are on side slopes and foot slopes of mountains. The Scout Variant soils are in concave areas on the upper part of mountainsides. The Broadhead soils are on south-facing foot slopes. The Camelback Variant and Valmar Variant soils are on mountaintops and on the higher ridges. The Moonlight soils are in concave areas on the lower part of mountainsides. The Dateman soils are on convex, north-facing mountainsides. The Ireland, Camelback, and Valmar soils are on south-facing mountainsides. The Enochville and Enochville Variant soils are on stream terraces.

Most areas of this unit are used for timber production, livestock grazing, woodland wildlife habitat, and watershed. A few areas are used for homesite and recreational development.

The main limitations of this unit for producing and harvesting timber are slope, the hazard of water erosion, and the hazard of plant competition. The main limitation for livestock grazing is the limited amount of forage produced when the tree canopy closes.

The natural vegetation produced by the soils in this unit provides food and cover for mule deer, elk, bear, ruffed grouse, blue grouse, owls, woodpeckers, and squirrels.

The main limitations of this unit for homesite development are slope, stones, a slow water intake rate, and shrink-swell potential. The main limitations for recreational development are slope, the hazard of water erosion, and a slow water intake rate. The main limitations for local roads and streets are slope, shrink-swell potential, low soil strength, and frost action potential.

Detailed Soil Map Units

The map units delineated on the detailed maps at the back of this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information on each map unit is given under "Use and Management of the Soils."

A map unit delineation on a map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils or miscellaneous areas. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils and miscellaneous areas are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some "included" areas that belong to other taxonomic classes.

Most included soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar inclusions. They may or may not be mentioned in the map unit description. Other included soils and miscellaneous areas, however, have properties and behavior divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, inclusions. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The included areas of contrasting soils or miscellaneous areas are mentioned in the map unit descriptions. A few included areas may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of included areas in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but if intensive use of small areas is planned, onsite investigation to precisely define and locate the soils and miscellaneous areas is needed.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer or of the underlying layers, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer or of the underlying layers. They also can differ in slope, stoniness, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Rexburg silt loam, 1 to 4 percent slopes, is one of several phases in the Rexburg series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes or associations.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Ririe-Watercanyon complex, 4 to 12 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Toponce-Broadhead association, 6 to 30 percent slopes, is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

This survey was mapped at two levels of detail. At the most detailed level, map units are narrowly defined. This means that map unit boundaries were plotted and verified at closely spaced intervals. At the less detailed level, map units are broadly defined. Boundaries were plotted and verified at wider intervals. The broadly defined units are indicated by an asterisk in the map legend. The detail of mapping was selected to meet the anticipated long-term use of the survey, and the map units were designed to meet the needs for that use.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables (see "Summary of Tables") give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

In the map units that follow, the hazard of soil blowing is given only for those soils that are in areas subject to high wind velocities.

Map Unit Descriptions

1—Arbone silt loam, 1 to 4 percent slopes. This very deep, well drained soil is on stream terraces and fan terraces. It formed in alluvium derived from mixed sources. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,700 to 5,700 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 90 days.

Typically, the surface layer is grayish brown silt loam 9 inches thick. The subsoil is brown and pale brown, calcareous silt loam 9 inches thick. The substratum to a depth of 60 inches or more is very pale brown, calcareous silt loam.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is Arbone gravelly silt loam in slightly convex areas, about 5 percent is Hondoho gravelly silt loam in convex areas and near terrace breaks, and about 5 percent is Watercanyon silt loam in eroded areas. The remaining 5 percent is small areas of Hondoho cobbly silt loam, Ririe silt loam, Arimo silt loam, and soils that have slopes of more than 4 percent.

Permeability of this Arbone soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight. If this soil is irrigated, runoff is medium and the hazard of water erosion is moderate.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as irrigated cropland and as rangeland.

This unit is well suited to nonirrigated crops. It is used primarily for the production of wheat, barley, and a small amount of alfalfa hay. It is limited mainly by low rainfall. Because precipitation is marginal for annual cropping, the cropping system usually includes small grain and summer fallow. Maintaining at least 1,500 pounds of straw per acre on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are performed on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass.

This unit is well suited to irrigated crops. It is used primarily for the production of wheat, barley, and alfalfa hay. Sprinkler irrigation is a suitable method of applying water. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion. Irrigation water needs to be applied at a rate that insures optimum production without increasing deep percolation, runoff, and erosion.

This unit is well suited to use as rangeland. It has few limitations. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. The suitability of the unit for rangeland seeding is good.

This map unit is in capability subclasses IIIe, irrigated, and IIIc, nonirrigated.

2—Arbone silt loam, 4 to 12 percent slopes. This very deep, well drained soil is on stream terraces and fan terraces. It formed in alluvium derived from mixed sources. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,700 to 5,700 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 90 days.

Typically, the surface layer is grayish brown silt loam 9 inches thick. The subsoil is brown and pale brown, calcareous silt loam 9 inches thick. The substratum to a depth of 60 inches or more is very pale brown, calcareous silt loam.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is Arbone gravelly silt loam in slightly convex areas and near terrace breaks and about 10 percent is Hondoho cobbly silt loam in convex areas and near terrace breaks. The remaining 5 percent is small areas of Hondoho gravelly silt loam, Watercanyon silt loam, Ririe silt loam, Arimo silt loam, and soils that have slopes of less than 4 percent or more than 12 percent.

Permeability of this Arbone soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as rangeland.

This unit is suited to nonirrigated crops. It is used primarily for the production of wheat, barley, and a small amount of alfalfa hay. It is limited mainly by low rainfall and the hazard of water erosion. Because precipitation is marginal for annual cropping, the cropping system usually includes small grain and summer fallow. Practices that can be used to control erosion include seeding early in fall, stubble mulch tillage, and construction of terraces, diversions, and grassed waterways. Special designs for terraces and diversions are needed because of the shallow depth to moderately alkaline and strongly alkaline soil material. Bringing this material to the surface reduces the production of crops. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining at least 1,500 pounds of straw per acre on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. The suitability of this unit for rangeland seeding is good.

This map unit is in capability subclass IIIe.

3—Arbone-Hondoho complex, 12 to 20 percent slopes. This map unit is on mountain foot slopes and dissected fan terraces. The native vegetation is mainly shrubs and grasses. Elevation is about 4,700 to 5,700 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

This unit is about 55 percent Arbone gravelly silt loam and 30 percent Hondoho gravelly silt loam. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Hondoho cobbly silt loam on south-facing side slopes and near the bottoms of drainageways and about 5 percent is soils that are similar to the Arbone and Hondoho soils but have slopes of more than 20 percent. The remaining 5 percent is small areas of Watercanyon silt loam and very deep soils in drainageways.

The Arbone soil is very deep and well drained. It formed in alluvium derived from mixed sources. Typically, the surface layer is grayish brown gravelly silt loam 9 inches thick. The subsoil is brown and pale brown, calcareous gravelly silt loam 9 inches thick. The substratum to a depth of 60 inches or more is very pale brown, calcareous gravelly silt loam.

Permeability of the Arbone soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Hondoho soil is very deep and well drained. It formed in alluvium derived from mixed sources. Typically, the surface layer is grayish brown gravelly silt loam 8 inches thick. The subsoil is brown, calcareous gravelly silt loam 7 inches thick. The substratum to a depth of 60 inches or more is light yellowish brown and pale brown, calcareous very gravelly silt loam.

Permeability of the Hondoho soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. This unit is suited to range seeding. Use of mechanical equipment such as rangeland plows and drills is limited by the very high hazard of erosion. Nonmechanical treatment practices may be more suitable.

This map unit is in capability subclass IVe.

4—Arbone-McCarey-Lava flows complex, 4 to 12 percent slopes. This map unit is on the Portneuf Basalt Flow and the stream terraces created by the Bonneville Flood. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,600 to 4,800 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 90 days.

This unit is about 40 percent Arbone silt loam, 20 percent McCarey silt loam, and 15 percent Lava flows. The Arbone soil is in channeled areas between areas of Lava flows. The McCarey soil is adjacent to the Lava flows and commonly separates the Lava flows from the Arbone soil. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 5 percent is McCarey Variant extremely stony silt loam adjacent to Lava flows, about 5 percent is Arimo silt loam, and about 5 percent is Downey gravelly silt loam. Arimo and Downey soils are in pockets and on long, rounded terraces. The remaining 10 percent is small areas of Hondoho gravelly silt loam, Holmes gravelly loam, Manila silt loam, and soils that have slopes of less than 4 percent or more than 12 percent.

The Arbone soil is very deep and well drained. It formed in alluvium derived from mixed sources. Typically, the surface layer is grayish brown silt loam 9 inches thick. The subsoil is brown and pale brown, calcareous silt loam 9 inches thick. The substratum to a depth of 60 inches or more is very pale brown, calcareous silt loam.

Permeability of the Arbone soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high. If this soil is irrigated, runoff is very rapid and the hazard of water erosion is very high.

The McCarey soil is moderately deep and well drained. It formed in loess and silty alluvium and in material weathered from basalt. Typically, the surface layer is dark grayish brown and grayish brown silt loam 12 inches thick. The subsoil is brown silt loam 5 inches thick. The substratum is light gray, calcareous silt loam 11 inches thick over basalt. Depth to bedrock ranges from 20 to 40 inches.

Permeability of the McCarey soil is moderately slow. Available water capacity is moderate. Effective rooting depth is 20 to 40 inches. Runoff is rapid, and the hazard of water erosion is high. If this soil is irrigated, runoff is very rapid and the hazard of water erosion is very high.

Lava flows consists of exposed basalt that is highly fractured and has many crevices. The vegetation is mostly moss and lichens. The material in some crevices supports serviceberry, mountain big sagebrush, Rocky Mountain maple, currant, and antelope bitterbrush.

This unit is used as irrigated cropland and pastureland, nonirrigated cropland, and rangeland.

This unit is suited to irrigated crops and pasture. Wheat, barley, and alfalfa hay are the main crops grown. The unit is limited mainly by the very high hazard of erosion and the areas of Lava flows. Sprinkler irrigation is a suitable method of applying water. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion. Irrigation water needs to be applied at a rate that insures optimum production without increasing deep percolation, runoff, and erosion. Erosion can be reduced and fertility maintained by using a suitable cropping system, crop residue management, minimum tillage, and proper fertilization.

This unit is suited to nonirrigated crops. It is used for the production of wheat, barley, and a very small amount of alfalfa hay. It is limited mainly by low precipitation, the high hazard of water erosion, and the areas of Lava flows. Because precipitation is marginal for annual cropping, the cropping system usually includes small grain and summer fallow. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are performed on the contour or across the slope.

Chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining at least 1,500 pounds of straw per acre on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

This unit is suited to use as rangeland. The main limitation is areas of Lava flows. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. The Arbone and McCarey soils are suited to the use of mechanical equipment such as rangeland plows and drills. These soils are suited to rangeland seeding.

This map unit is in capability subclass IVe, irrigated and nonirrigated.

5—Arbone-Rubble land complex, 2 to 8 percent slopes. This map unit is on stream terraces adjacent to the Portneuf Basalt Flow. The native vegetation is mainly shrubs and grasses. Elevation is about 4,500 to 4,700 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 90 days.

This unit is about 50 percent Arbone silt loam and 30 percent Rubble land. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 10 percent is Rexburg silt loam in concave areas and about 5 percent is Hondoho cobbly silt loam in slightly convex areas. The remaining 5 percent is small areas of Arimo silt loam, McCarey silt loam, and soils and Rubble land that have slopes of more than 8 percent.

The Arbone soil is very deep and well drained. It formed in alluvium derived from mixed sources. Typically, the surface layer is grayish brown silt loam 9 inches thick. The subsoil is brown and pale brown, calcareous silt loam 9 inches thick. The substratum to a depth of 60 inches or more is very pale brown, calcareous silt loam.

Permeability of the Arbone soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is moderate.

Rubble land consists mainly of areas of stones and boulders primarily deposited by the Bonneville Flood. Rubble land supports little vegetation except for mosses and lichens and a few stunted shrubs or trees growing between the rock fragments. The stones and boulders are subangular to subrounded and are 1 foot to 20 feet in diameter. Areas of Rubble land are not suitable for most land uses.

This unit is used as rangeland.

This unit is suited to use as rangeland. It is limited mainly by the areas of Rubble land. The potential natural plant community on the Arbone soil is mainly mountain big sagebrush and bluebunch wheatgrass. This soil has few limitations for use as rangeland. It is well suited to the use of mechanical equipment such as rangeland plows and drills.

This map unit is in capability subclass VIs.

6—Arimo silt loam, 0 to 3 percent slopes. This very deep, well drained soil is on terraces. It formed in loess and silty alluvium overlying alluvial sand and gravel of mixed mineralogy. The soil is moderately deep to sand and gravel. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,600 to 4,900 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 95 days.

Typically, the surface layer is grayish brown silt loam 6 inches thick. The subsoil is brown silt loam 12 inches thick. The upper 15 inches of the substratum is white, calcareous silt loam, and the lower part to a depth of 60 inches or more is multicolored, calcareous extremely gravelly coarse sand. Depth to extremely gravelly coarse sand ranges from 20 to 40 inches.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 10 percent is Downey gravelly silt loam near terrace breaks and drainageway side slopes and about 5 percent is soils that have slopes of slightly more than 3 percent.

Permeability of this Arimo soil is moderate to a depth of 33 inches and very rapid below this depth. Available water capacity is moderate. Effective rooting depth is 60 inches or more. In both irrigated and nonirrigated areas, runoff is slow and the hazard of water erosion is slight.

Most areas of this unit are used as irrigated cropland. A few areas are used as rangeland, for homesite development, or as nonirrigated cropland.

This unit is well suited to irrigated crops. It is used mainly for the production of wheat, barley, and alfalfa hay. Sprinkler irrigation is a suitable method of applying water. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion. To avoid overirrigating and leaching of plant nutrients, applications of irrigation water should be adjusted to the available water capacity, the water intake rate, and the crop needs. Returning crop residue to the soil or regularly adding other organic matter improves fertility, reduces crusting, and increases the water intake rate.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly Wyoming big sagebrush and bluebunch wheatgrass. The suitability of this unit for rangeland seeding is good.

If this unit is used for homesite development, the main limitations are the hazard of cutbanks caving in and seepage in the lower part of the soil and the hazard of frost action in the upper part. If the density of housing is moderate to high, community sewage systems help to prevent contamination of ground water as a result of seepage from onsite sewage disposal systems. Cutbanks are not stable and are subject to slumping. Frost action potential is a limitation in maintaining roads, streets, driveways, and sidewalks.

If this unit is used as nonirrigated cropland, the main limitations are low precipitation and the restricted available water capacity. Because precipitation is marginal for annual cropping, the cropping system usually includes small grain and summer fallow. Maintaining at least 1,500 pounds of straw per acre on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

This map unit is in capability subclass IIIs, irrigated and nonirrigated.

7—Bahem silt loam, 0 to 2 percent slopes. This very deep, well drained soil is on terraces. It formed in silty alluvium overlying flood-deposited sand, gravel, cobbles, and stones of mixed mineralogy. Elevation is about 4,400 to 4,500 feet. The average annual precipitation is about 10 inches, the average annual air temperature is about 47 degrees F, and the average frost-free period is about 120 days.

Typically, the surface layer is pale brown, calcareous silt loam 11 inches thick. The upper 38 inches of the underlying material is pale brown, white, and light gray, calcareous silt loam, and the lower part to a depth of 60 inches or more is multicolored extremely cobbly sand. Depth to extremely cobbly sand ranges from 40 to 60 inches.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 10 percent is Broxon silt loam on terraces. The remaining 5 percent is small areas of Broncho cobbly loam, soils that are similar to this Bahem soil but have a weakly cemented pan at a depth of 25 to 35 inches, and soils that have slopes of more than 2 percent.

Permeability of this Bahem soil is moderate to a depth of 49 inches and very rapid below this depth. Available water capacity is high. Effective rooting depth is 60 inches or more. In both irrigated and nonirrigated areas, runoff is slow and the hazard of water erosion is slight. The hazard of soil blowing is slight.

Most areas of this unit are used as irrigated cropland and pasture. A few areas are used for homesite development.

This unit is well suited to irrigated crops. It is used for the production of wheat, barley, potatoes, and alfalfa hay. Furrow, border, corrugation, and sprinkler irrigation systems are suited to this unit. Irrigation water needs to be applied at a rate that insures optimum production without increasing deep percolation, runoff, and erosion. Maintaining crop residue on or near the surface reduces runoff and helps to maintain soil tilth and organic matter content.

The soil in this unit is very susceptible to the formation of a tillage pan and other compacted layers. The tillage pan and other compacted layers reduce the permeability of the soil and restrict root penetration. Deep subsoiling in fall helps to break up the compacted layers and helps to prevent them from forming.

This unit is well suited to use as irrigated pasture. Irrigation water can be applied by the border, corrugation, or sprinkler methods.

Population growth has resulted in increased construction of homes on this unit. The main limitations for homesite development are the hazard of frost action and moderate permeability in the upper part of the soil and the hazard of cutbanks caving in and seepage in the lower part. Frost action potential is a limitation in maintaining roads, streets, driveways, and sidewalks. If the density of housing is moderate to high, community sewage systems help to prevent contamination of ground water by seepage from onsite sewage disposal systems. Cutbanks are not stable and are subject to slumping.

This map unit is in capability subclasses IIc, irrigated, and VIc, nonirrigated.

8—Bahem silt loam, 2 to 4 percent slopes. This very deep, well drained soil is on terraces. It formed in silty alluvium overlying flood-deposited sand, gravel, cobbles, and stones of mixed mineralogy. Elevation is about 4,400 to 4,500 feet. The average annual precipitation is about 10 inches, the average annual air temperature is about 47 degrees F, and the average frost-free period is about 120 days.

Typically, the surface layer is pale brown, calcareous silt loam 11 inches thick. The upper 38 inches of the underlying material is pale brown, white, and light gray, calcareous silt loam, and the lower part to a depth of 60 inches or more is multicolored extremely cobbly sand. Depth to extremely cobbly sand ranges from 40 to 60 inches.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 10 percent is Broxon silt loam on terraces. The remaining 5 percent is small areas of Broncho cobbly loam, soils that are similar to this Bahem soil but have a weakly cemented pan at a depth of 25 to 35 inches, and soils that have slopes of more than 4 percent.

Permeability of this Bahem soil is moderate to a depth of 49 inches and very rapid below this depth. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight. If this soil is irrigated, runoff is medium and the hazard of water erosion is moderate. The hazard of soil blowing is slight.

Most areas of this unit are used as irrigated cropland and pasture. A few areas are used for homesite development.

This unit is well suited to irrigated crops. It is used for the production of wheat, barley, potatoes, and alfalfa hay. It is limited mainly by the moderate hazard of erosion. Sprinkler irrigation is a suitable method of applying water. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion. Irrigation water needs to be applied at a rate that insures optimum production without increasing deep percolation, runoff, and erosion. Maintaining crop residue on or near the surface reduces runoff and helps to maintain soil tilth and organic matter content.

The soil in this unit is very susceptible to the formation of a tillage pan and other compacted layers. The tillage pan and other compacted layers reduce the permeability of the soil and restrict root penetration. Deep subsoiling in fall helps to break up the compacted layers.

This unit is well suited to use as irrigated pasture. Irrigation water can be applied by the border, corrugation, or sprinkler methods.

Population growth has resulted in increased construction of homes on this unit. The main limitations for homesite development are the hazard of frost action and moderate permeability in the upper part of the soil and the hazard of cutbanks caving in and seepage in the lower part. Frost action potential is a limitation in maintaining roads, streets, driveways, and sidewalks. If the density of housing is moderate to high, community sewage systems help to prevent the contamination of ground water by seepage from onsite sewage disposal systems. Cutbanks are not stable and are subject to slumping.

This map unit is in capability subclasses IIe, irrigated, and VIc, nonirrigated.

9—Bancroft silt loam, 4 to 12 percent slopes. This very deep, well drained soil is on fan terraces, foothills, and mountain foot slopes. It formed in loess and in silty alluvium derived from loess. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 5,000 to 6,000 feet. The average annual precipitation is about 15 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

Typically, the surface layer is brown silt loam 7 inches thick. The upper 30 inches of the subsoil is brown and yellowish brown silty clay loam, and the lower 4 inches is light yellowish brown, calcareous silt loam. The substratum to a depth of 60 inches or more is very pale brown and pale brown, calcareous silt loam.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 5 percent is Ricrest gravelly silt loam on south- and west-facing side slopes, about 5 percent is Hades gravelly silt loam on north- and east-facing concave side slopes, and about 10 percent is Watercanyon silt loam on eroded and convex ridges. The remaining 5 percent is small areas of Cedarhill cobbly silt loam, Lanoak silt loam, and soils that have slopes of less than 4 percent or more than 12 percent.

Permeability of this Bancroft soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as rangeland.

This unit is suited to nonirrigated crops. It is limited mainly by susceptibility to erosion. Erosion can be reduced and fertility maintained by using a suitable cropping system, crop residue management, minimum tillage, and proper fertilization. Practices that can be used to control erosion include seeding early in fall, stubble mulch tillage, and construction of terraces, diversions, and grassed waterways. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining at least 1,500 pounds of straw per acre on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush, bluebunch wheatgrass, and arrowleaf balsamroot. The suitability of this unit for rangeland seeding is good.

This map unit is in capability subclass IIIe.

10—Bancroft silt loam, 12 to 20 percent slopes. This very deep, well drained soil is on mountainsides, foothills, and fan terraces. It formed in loess and in silty alluvium derived from loess. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 5,000 to 6,000 feet. The average annual precipitation is about 15 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

Typically, the surface layer is brown silt loam 7 inches thick. The upper 30 inches of the subsoil is brown and yellowish brown silty clay loam, and the lower 4 inches is light yellowish brown, calcareous silt loam. The substratum to a depth of 60 inches or more is very pale brown and pale brown, calcareous silt loam.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is Watercanyon silt loam on convex ridges and south-facing, convex side slopes, about 5 percent is Hades gravelly silt loam on north-facing, slightly concave side slopes, and about 5 percent is Cedarhill very cobbly silt loam, high precipitation, on south-facing, convex side slopes. The remaining 5 percent is small areas of Manila silt loam, Lanoak silt loam, Coalbank very fine sandy loam, Trailcreek very fine sandy loam, Hondoho cobbly silt loam, and soils that have slopes of less than 12 percent or more than 20 percent.

Permeability of this Bancroft soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as rangeland.

This unit is suited to nonirrigated crops. It is used for the production of wheat and barley. It is limited mainly by the very high hazard of water erosion. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are performed on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining at least 1,500 pounds of straw per acre on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

This unit is well suited to use as rangeland. The potential natural plant community is mainly bluebunch wheatgrass, mountain big sagebrush, and arrowleaf balsamroot. This unit is suited to the use of mechanical equipment such as rangeland plows and drills. The main limitation is the very high hazard of water erosion if the vegetation is removed and the soil surface is disturbed. Nonmechanical treatment practices may be more suitable.

This map unit is in capability subclass IVe.

11—Bancroft-Manila complex, 15 to 30 percent slopes. This map unit is on fan terraces and mountain foot slopes. The native vegetation is mainly shrubs and grasses. Elevation is about 5,000 to 6,000 feet. The average annual precipitation is about 16 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 75 days.

This unit is about 45 percent Bancroft silt loam and about 30 percent Manila silt loam. The Bancroft soil is on nearly plane to slightly convex side slopes, and the Manila soil is on nearly plane to slightly concave side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is Joes silt loam on eroded, south-facing side slopes and ridgetops, about 5 percent is Cedarhill very gravelly silt loam, and about 5 percent is Yago extremely stony silty clay loam on ridgetops and convex side slopes. The remaining 5 percent is small areas of Broadhead silt loam, Trailcreek very fine sandy loam, and soils that have slopes of less than 15 percent or more than 30 percent.

The Bancroft soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. Typically, the surface layer is brown silt loam 7 inches thick. The upper 30 inches of the subsoil is brown and yellowish brown silty clay loam, and the lower 4 inches is light yellowish brown, calcareous silt loam. The substratum to a depth of 60 inches or more is pale brown and very pale brown, calcareous silt loam.

Permeability of the Bancroft soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Manila soil is very deep and well drained. It formed in alluvium derived from sedimentary and metasedimentary rock and loess. Typically, the upper 7 inches of the surface layer is grayish brown silt loam and the lower 8 inches is grayish brown silty clay loam. The subsoil is yellowish brown and dark brown silty clay and silty clay loam 33 inches thick. The substratum to a depth of 60 inches or more is pale brown and light yellowish brown, calcareous silt loam.

Permeability of the Manila soil is slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as nonirrigated cropland and rangeland.

This unit is suited to nonirrigated crops. It is limited mainly by the very high hazard of water erosion and the frost-free period. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are performed on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining at least 1,500 pounds of straw per acre on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. In some years the growing season is shorter than normal, which significantly reduces yields of crops on this unit. Seeding to permanent cover may be needed to reduce erosion.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. Mechanical equipment such as rangeland plows and drills is suitable for use in areas where slopes are 20 percent or less, but its use is limited in areas where slopes are more than 20 percent because of the very high hazard of erosion. Nonmechanical treatment practices may be more suitable.

This map unit is in capability subclass VIe.

12—Banida silty clay loam, 0 to 2 percent slopes. This very deep, moderately well drained soil is on lake terraces. It formed in lake sediment and in alluvium derived from lake sediment. Elevation is about 4,750 to 5,150 feet. The average annual precipitation is about 16 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 95 days.

Typically, the upper 6 inches of the surface layer is brown silty clay loam and the lower 3 inches is brown silty clay. The upper 13 inches of the subsoil is reddish brown silty clay, and the lower 18 inches is reddish brown and light brown, calcareous silty clay. The substratum to a depth of 60 inches or more is light brown, calcareous silty clay.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 15 percent is a soil that is similar to this Banida soil but has a silt loam surface layer and is on concave side slopes and in drainageways and about 5 percent is Oxford silty clay loam on the higher convex side slopes and ridges. The remaining 5 percent is small areas of Hondoho cobbly silt loam and soils that are strongly saline or very strongly saline. These included saline soils are near the southern boundary of the survey area, south of Swan Lake.

Permeability of this Banida soil is very slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

This unit is used as nonirrigated cropland.

This unit is suited to nonirrigated crops. It is used for the production of wheat and barley. The main limitation is the high clay content of the surface layer. The soil in this unit is difficult to till when it is dry and is subject to clodding and compaction if it is tilled when too wet. The period during which the soil moisture content is most suitable for tillage is short. Maintaining at least 1,500 pounds of straw per acre on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration.

This map unit is in capability subclass IIIs.

13—Bear Lake-Bear Lake Variant complex, drained, 0 to 1 percent slopes. This map unit is on flood plains and low terraces. Drainage of this unit has been altered by the natural downcutting of the Portneuf River. The native vegetation is mainly sedges and grasses. Elevation is about 5,100 to 5,200 feet. The average annual precipitation is about 15 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 85 days.

This unit is about 50 percent Bear Lake silt loam and about 30 percent Bear Lake Variant silt loam. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is Inkom silt loam along the edges of the bottom lands and about 5 percent is soils that are similar to the Bear Lake and Bear Lake Variant soils but are very poorly drained. The remaining 10 percent is small areas of tufa outcrops, soils that are similar to the Bear Lake Variant soil but are less than 20 inches deep to tufa, Joevar silt loam, soils that are similar to the Bear Lake and Bear Lake Variant soils but that have a sandy loam subsoil, and soils that have slopes of slightly more than 1 percent.

The Bear Lake soil is very deep and poorly drained. It formed in silty alluvium derived from mixed sources. Typically, the surface layer is dark grayish brown, calcareous silt loam 12 inches thick. The subsoil is light gray, calcareous silty clay loam 12 inches thick. The upper 16 inches of the substratum is light gray, calcareous silty clay loam, and the lower part to a depth of 60 inches or more is light gray, calcareous silt loam.

Permeability of the Bear Lake soil is moderately slow. Available water capacity is high. Effective rooting depth for non-water-tolerant plants is limited by a seasonal high water table that is at a depth of 0 to 1.5 feet from January through June. Runoff is very slow, and the hazard of water erosion is slight. This soil is frequently flooded for brief periods from January through June.

The Bear Lake Variant soil is moderately deep and poorly drained. It formed in silty alluvium derived from mixed sources. Typically, the surface layer is very dark gray, calcareous silt loam 5 inches thick. The upper 4 inches of the subsoil is very dark gray, calcareous silt loam, and the lower 8 inches is dark gray, calcareous silt loam. The substratum is gray, light olive gray, and dark gray, calcareous silt loam 19 inches thick over tufa. Depth to bedrock ranges from 20 to 40 inches.

Permeability of the Bear Lake Variant soil is moderately slow. Available water capacity is moderate. Effective rooting depth for non-water-tolerant plants is limited by a seasonal high water table that is at a depth of 0 to 1.5 feet from January through June, and for all plants it is limited by bedrock at a depth of 20 to 40 inches. Runoff is very slow, and the hazard of water erosion is slight. This soil is frequently flooded for brief periods from January through June.

This unit is used for the production of meadow hay and pasture.

This unit is suited to hay and pasture. The potential natural plant community on the unit is mainly tufted hairgrass and Nebraska sedge and other sedges. The main limitation is wetness. Wetness limits the choice of plants and the period of harvesting or grazing and increases the risk of winterkill. Plants that tolerate wetness should be seeded. Grazing and harvesting of hay should be delayed until the soil has drained sufficiently and is firm enough to withstand trampling by livestock and support the weight of harvesting equipment. This unit is capable of producing about 2 tons of grass hay per acre if nonirrigated and about 2.5 tons if irrigated.

This map unit is in capability subclass Vw, irrigated and nonirrigated.

14—Broadhead-Hades-Yago complex, 4 to 20 percent slopes. This map unit is on mountainsides and fan terraces. The native vegetation is mainly shrubs and grasses. Elevation is about 6,000 to 7,000 feet. The average annual precipitation is about 20 inches, the average annual air temperature is about 41 degrees F, and the average frost-free period is about 65 days.

This unit is about 30 percent Broadhead silt loam, about 25 percent Hades gravelly silt loam, and about 25 percent Yago extremely stony silty clay loam. The Broadhead soil generally is on south- and west-facing side slopes. The Hades and Yago soils are on the same landforms as the Broadhead soils, but they have a mound and intermound relationship. The Hades soil is on the mounds, and the Yago soil is in the intermound areas. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is very deep, poorly drained and somewhat poorly drained soils along drainageways. The remaining 15 percent is small areas of Sedgway gravelly silt loam, Harkness silt loam, Toponce silt loam, Camelback very cobbly silt loam, and soils that have slopes of less than 4 percent or more than 20 percent.

The Broadhead soil is very deep and well drained. It formed in mixed alluvium derived dominantly from sandstone and quartzite. The upper 2 inches of the surface layer is very dark grayish brown silt loam, and the lower 7 inches is very dark grayish brown silty clay loam. The subsoil to a depth of 60 inches or more is dark grayish brown and brown silty clay loam.

Permeability of the Broadhead soil is slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

The Hades soil is very deep and well drained. It formed in mixed alluvium derived dominantly from loess and quartzite. Typically, the surface layer is dark grayish brown and dark brown gravelly silt loam 7 inches thick. The upper 7 inches of the subsoil is dark brown gravelly silt loam, and the lower part to a depth of 60 inches or more is brown, yellowish brown, and light yellowish brown gravelly silty clay loam.

Permeability of the Hades soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

The Yago soil is very deep and well drained. It formed in mixed alluvium and colluvium derived dominantly from sandstone and quartzite. Typically, the surface layer is dark grayish brown extremely stony silty clay loam 10 inches thick. The upper 27 inches of the subsoil is brown very stony clay loam, and the lower 8 inches is light brown, calcareous very stony clay loam. The substratum to a depth of 60 inches or more is reddish yellow, calcareous very stony silty clay loam.

Permeability of the Yago soil is slow. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

This unit is used as rangeland.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. Use of mechanical equipment such as rangeland drills and plows is not practical on the Yago soil because the surface is extremely stony. Livestock and wildlife concentrate in the included areas of poorly drained and somewhat poorly drained soils within this unit. These areas provide access to water and shade, and they produce the more palatable vegetation when not overused. If economically feasible, these areas should be managed using a deferred grazing system. It is likely that many of these areas will be considered sacrifice areas when developing an overall grazing plan.

This map unit is in capability subclass VIe.

15—Broadhead-Yago complex, 4 to 12 percent slopes. This map unit is on mountain foot slopes and fan terraces. The native vegetation is mainly shrubs and grasses. Elevation is about 6,000 to 6,500 feet. The average annual precipitation is about 20 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 75 days.

This unit is about 60 percent Broadhead silt loam and about 20 percent Yago extremely stony silty clay loam. The Broadhead soil is generally on south- and west-facing, concave to slightly convex foot slopes and fan terraces. The Yago soil is generally on south- and west-facing, convex foot slopes and fan terraces. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is Toponce silt loam on concave, north- and east-facing side slopes and about 5 percent is soils that have a high shrink-swell potential in the surface layer and are on the same kind of landscape positions as the Yago soil. The remaining 10 percent is small areas of very deep, poorly drained and somewhat poorly drained soils, Camelback very cobbly silt loam, Hades gravelly silt loam, and soils that have slopes of more than 12 percent.

The Broadhead soil is very deep and well drained. It formed in mixed alluvium derived dominantly from sandstone and quartzite. Typically, the upper 2 inches of the surface layer is very dark grayish brown silt loam and the lower 7 inches is very dark grayish brown silty clay loam. The subsoil to a depth of 60 inches or more is dark grayish brown and brown silty clay loam.

Permeability of the Broadhead soil is slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

The Yago soil is very deep and well drained. It formed in mixed alluvium and colluvium derived dominantly from sandstone and quartzite. Typically, the surface layer is dark grayish brown extremely stony silty clay loam 10 inches thick. The upper 27 inches of the subsoil is brown very stony clay loam, and the lower 8 inches is light brown, calcareous very stony clay loam. The substratum to a depth of 60 inches or more is reddish yellow, calcareous very stony silty clay loam.

Permeability of the Yago soil is slow. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is moderate.

Most areas of this unit are used as rangeland. A few areas are used for hay and pasture.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. Use of mechanical equipment such as rangeland plows and drills is not practical on the Yago soil because the surface is extremely stony.

This unit is suited to hay and pasture. The main limitations are the extremely stony surface of the Yago soil and the hazard of water erosion. Stones on the surface of the Yago soil affect the use of most equipment. If this unit is irrigated, sprinkler irrigation is a suitable method of applying water. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion.

This map unit is in capability subclass IVe, irrigated and nonirrigated.

16—Broadhead-Yago complex, 12 to 20 percent slopes. This map unit is on mountain foot slopes and fan terraces. The native vegetation is mainly shrubs and grasses. Elevation is about 5,500 to 6,500 feet. The average annual precipitation is about 20 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 75 days.

This unit is about 40 percent Broadhead silt loam and about 35 percent Yago extremely stony silty clay loam. The Broadhead soil is generally on slightly concave foot slopes and fan terraces. The Yago soil is generally on convex foot slopes and fan terraces. The Yago soil generally has a more southerly or westerly aspect than the Broadhead soil. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 5 percent is Hades gravelly silt loam on slightly concave, north- and east-facing side slopes, about 5 percent is Camelback very cobbly silt loam on slightly convex, north- and east-facing side slopes, and about 5 percent is soils that have a high shrink-swell potential in the surface layer and are on the same kind of landscape positions as the Yago soil. The remaining 10 percent is small areas of Cedarhill very cobbly silt loam, soils that are underlain by and contain volcanic ash, Bancroft silt loam, Toponce silt loam, and soils that have slopes of less than 12 percent or more than 20 percent.

The Broadhead soil is very deep and well drained. It formed in mixed alluvium derived dominantly from sandstone and quartzite. Typically, the upper 2 inches of the surface layer is very dark grayish brown silt loam and the lower 7 inches is very dark grayish brown silty clay loam. The subsoil to a depth of 60 inches or more is dark grayish brown and brown silty clay loam.

Permeability of the Broadhead soil is slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Yago soil is very deep and well drained. It formed in mixed alluvium and colluvium derived dominantly from sandstone and quartzite. Typically, the surface layer is dark grayish brown extremely stony silty clay loam 10 inches thick. The upper 27 inches of the subsoil is brown very stony clay loam, and the lower 8 inches is light brown, calcareous very stony clay loam. The substratum to a depth of 60 inches or more is reddish yellow, calcareous very stony silty clay loam.

Permeability of the Yago soil is slow. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

This unit is used as rangeland.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. Grazing when the soil is wet results in compaction of the surface layer, poor tilth, and excessive runoff. Use of mechanical equipment such as rangeland plows and drills is not practical on the Yago soil because the surface is extremely stony.

This map unit is in capability subclass IVe.

17—Broncho cobbly loam, 1 to 8 percent slopes. This very deep, somewhat excessively drained soil is on terraces. It formed in alluvium that was deposited mainly by the ancient Bonneville Flood. Elevation is about 4,400 to 4,500 feet. The average annual precipitation is about 10 inches, the average annual air temperature is about 49 degrees F, and the average frost-free period is about 120 days.

Typically, the surface layer is pale brown cobbly loam 6 inches thick. The subsoil is very pale brown, calcareous cobbly loam 7 inches thick. The substratum to a depth of 60 inches or more is multicolored, calcareous extremely cobbly coarse sand.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Bahem silt loam on the outer edges of the unit, about 5 percent is Broxon silt loam near the boundaries of the unit, and about 5 percent is soils that are similar to this Broncho soil but are very gravelly loam throughout the profile.

Permeability of this Broncho soil is moderate to a depth of 13 inches and very rapid below this depth. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is moderate.

This unit is used mainly for irrigated hay, pasture, and crops. It is also used for homesite development.

This unit is suited to irrigated hay and pasture. The main limitations are cobbles and gravel on the surface and low available water capacity. Because the soil in this unit is droughty, applications of irrigation water should be light and frequent. Sprinkler irrigation is a suitable method of applying water. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion.

This unit is suited to irrigated crops. It is used for the production of wheat, barley, and potatoes. The main limitations are the shape and size of areas of the unit, cobbles and gravel on the surface, and low available water capacity. The long, narrow shape of areas of this unit generally dictates that they be included with adjacent soils when farmed. Because the soil is droughty, applications of irrigation water should be light and frequent. Sprinkler irrigation is a suitable method of applying water. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion. Maintaining crop residue on or near the surface reduces runoff and helps to maintain soil tilth and organic matter content.

Population growth has resulted in increased construction of homes on this unit. The main limitations are seepage and the hazard of cutbanks caving in. If the density of housing is moderate to high, community sewage systems help to prevent contamination of ground water as a result of seepage from onsite sewage disposal systems. Cutbanks are not stable and are subject to slumping.

This map unit is in capability subclasses IVe, irrigated, and VIe, nonirrigated.

18—Broncho extremely stony loam, 4 to 20 percent slopes. This very deep, somewhat excessively drained soil is on terraces. It formed in alluvium deposited mainly by the ancient Bonneville Flood. The native vegetation is mainly shrubs and grasses. Elevation is about 4,400 to 4,500 feet. The average annual precipitation is about 10 inches, the average annual air temperature is about 49 degrees F, and the average frost-free period is about 120 days.

Typically, the surface layer is pale brown extremely stony loam 6 inches thick. The subsoil is very pale brown, calcareous very stony loam 7 inches thick. The substratum to a depth of 60 inches or more is multicolored, calcareous extremely stony coarse sand.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is Broxon silt loam that has slopes of 0 to 2 percent and is on the outer edges of the unit, about 5 percent is Broncho cobbly loam that has slopes of less than 8 percent, and about 5 percent is a soil that is similar to this Broncho soil and is on similar landscape positions but is extremely bouldery. The remaining 5 percent is small areas of Bahem silt loam and small areas of Broncho extremely stony loam that has slopes of as much as 50 percent and is on breaks along the Portneuf River.

Permeability of this Broncho soil is moderate to a depth of 13 inches and very rapid below this depth. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

Most areas of this unit are used as rangeland. A few areas are used for homesite development.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly Wyoming big sagebrush, bluebunch wheatgrass, and Thurber needlegrass. Use of mechanical equipment such as rangeland plows and drills is not practical on this unit because of the extremely stony surface. This unit is limited for livestock watering ponds and other water impoundments by the seepage potential.

Population growth has resulted in increased construction of homes on this unit. The main limitations for homesite development are large stones, seepage, and the hazard of cutbanks caving in. The presence of stones and cobbles may hamper excavation. If the density of housing is moderate to high, community sewage systems help to prevent contamination of ground water as a result of seepage from onsite sewage disposal systems. Cutbanks are not stable and are subject to slumping.

This map unit is in capability subclass VIIs.

19—Broncho Variant-Pocatello complex, 20 to 50 percent slopes. This map unit is on fan terrace breaks and side slopes along drainageways. The native vegetation is mainly shrubs and grasses. Elevation is about 4,400 to 5,200 feet. The average annual precipitation is about 12 inches, the average annual air temperature is about 47 degrees F, and the average frost-free period is about 110 days.

This unit is about 45 percent Broncho Variant very gravelly loam and about 45 percent Pocatello silt loam. The Broncho Variant soil is generally on south- and west-facing side slopes, and the Pocatello soil is generally on north- and east-facing side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 10 percent of the total acreage of this unit. Of this, about 5 percent is soils that have slopes of less than 20 percent or more than 50 percent. The remaining 5 percent is small areas of Rock outcrop and volcanic ash outcrops and soils that are similar to the Broncho Variant soil but are less than 40 inches deep to bedrock or have a very stony loam surface layer.

The Broncho Variant soil is very deep and well drained. It formed in alluvium derived dominantly from sedimentary and metasedimentary rock. Typically, the surface layer is pale brown, calcareous very gravelly loam 4 inches thick. The upper 24 inches of the underlying material is very pale brown and brown, calcareous extremely gravelly loam and extremely gravelly clay loam, and the lower part to a depth of 60 inches or more is yellowish brown, calcareous extremely gravelly sandy loam.

Permeability of the Broncho Variant soil is moderate. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Pocatello soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. Typically, the surface layer is grayish brown, calcareous silt loam 8 inches thick. The upper 32 inches of the underlying material is pale brown and very pale brown, calcareous silt loam, and the lower part to a depth of 60 inches or more is pale brown, calcareous silt loam.

Permeability of the Pocatello soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

Most areas of this unit are used as rangeland. A few areas are used for homesite development.

This unit is suited to use as rangeland. The potential natural plant community on the unit is mainly Wyoming big sagebrush, bluebunch wheatgrass, and arrowleaf balsamroot. Use of mechanical equipment such as rangeland plows and drills is not practical on this unit because of the steepness of slope. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas.

This unit is poorly suited to homesite development. It is limited mainly by the hazard of water erosion and slope. Excavation for roads and buildings increases the risk of erosion. Slope is a concern in installing septic tank absorption fields because effluent can surface in downslope areas and create a hazard to health. Access roads should be designed to provide adequate cut-slope grade, and drains are needed to control surface runoff and keep soil losses to a minimum.

This map unit is in capability subclass VIIe.

20—Broncho Variant-Ririe-Pocatello complex, 20 to 50 percent slopes. This map unit is on terrace breaks and side slopes along drainageways. The native vegetation is mainly shrubs and grasses. Elevation is about 4,600 to 5,200 feet. The average annual precipitation is about 12 inches, the average annual air temperature is about 46 degrees F, and the average frost-free period is about 100 days.

This unit is about 35 percent Broncho Variant very gravelly loam, about 30 percent Ririe silt loam, and about 20 percent Pocatello silt loam. The Broncho Variant and Pocatello soils are generally on the south- and west-facing side slopes, and the Ririe soil is on the north- and east-facing side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 10 percent is Hondoho gravelly silt loam on convex, north- and east-facing side slopes. The remaining 5 percent is small areas of Rock outcrop, soils that have slopes of less than 20 percent or more than 50 percent, soils that are similar to the Broncho Variant soil but have bedrock at a depth of less than 40 inches, and Broncho extremely stony loam.

The Broncho Variant soil is very deep and well drained. It formed in alluvium derived dominantly from sedimentary and metasedimentary rock. Typically, the surface layer is pale brown, calcareous very gravelly loam 4 inches thick. The upper 24 inches of the underlying material is very pale brown and brown, calcareous extremely gravelly loam and extremely gravelly clay loam, and the lower part to a depth of 60 inches or more is yellowish brown, calcareous extremely gravelly sandy loam.

Permeability of the Broncho Variant soil is moderate. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Ririe soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. Typically, the surface layer is brown silt loam 12 inches thick. The underlying material to a depth of 60 inches or more is pale brown and very pale brown, calcareous silt loam.

Permeability of the Ririe soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Pocatello soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. Typically, the surface layer is grayish brown, calcareous silt loam 8 inches thick. The upper 32 inches of the underlying material is pale brown and very pale brown, calcareous silt loam, and the lower part to a depth of 60 inches or more is pale brown, calcareous silt loam.

Permeability of the Pocatello soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

Most areas of this unit are used as rangeland. A few areas are used for homesite development.

This unit is suited to use as rangeland. The potential natural plant community on the Broncho Variant and Pocatello soils is mainly Wyoming big sagebrush, bluebunch wheatgrass, and arrowleaf balsamroot. The potential natural plant community on the Ririe soil is mainly bluebunch wheatgrass and mountain big sagebrush. Use of mechanical equipment such as rangeland plows and drills is not practical on this unit because of the steepness of slope. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas.

This unit is poorly suited to homesite development. It is limited mainly by slope and the very high hazard of water erosion. Excavation for roads and buildings increases the risk of erosion. Slope is a concern in installing septic tank absorption fields because effluent can surface in downslope areas and create a health hazard. Access roads should be designed to provide adequate cut-slope grade, and drains are needed to control surface runoff and keep soil losses to a minimum.

This map unit is in capability subclass VIIe.

21—Broxon silt loam, 0 to 2 percent slopes. This very deep, well drained soil is on terraces. It formed in loess and silty alluvium overlying flood-deposited sand, gravel, cobbles, and stones of mixed mineralogy. Elevation is about 4,400 to 4,500 feet. The average annual precipitation is about 10 inches, the average annual air temperature is about 47 degrees F, and the average frost-free period is about 120 days.

Typically, the surface layer is pale brown, calcareous silt loam 8 inches thick. The upper 17 inches of the underlying material is white and pale brown, calcareous silt loam, and the lower part to a depth of 60 inches or more is multicolored extremely stony sand. Depth to extremely stony sand ranges from 20 to 40 inches.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 10 percent is Bahem silt loam on terraces. The remaining 5 percent is small areas of Broncho cobbly loam, soils that are similar to this Broxon soil but have a weakly cemented pan at a depth of 20 to 30 inches, soils that have slopes of more than 2 percent, and very poorly drained soils in low-lying areas, dominantly along the Portneuf River.

Permeability of this Broxon soil is moderate to a depth of 25 inches and very rapid below this depth. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight in both irrigated and nonirrigated areas. The hazard of soil blowing is slight.

Most areas of this unit are used for irrigated crops and pasture. A few areas are used for homesite development.

This unit is well suited to irrigated crops. It is used for the production of wheat, barley, potatoes, and alfalfa hay. Furrow, border, corrugation, and sprinkler irrigation systems are suited to this unit. Irrigation water needs to be applied at a rate that insures optimum production without increasing deep percolation, runoff, and erosion. Maintaining crop residue on or near the surface reduces runoff and helps to maintain soil tilth and organic matter content. Tillage should be kept to a minimum.

The soil in this unit is very susceptible to the formation of a tillage pan and other compacted layers, which reduce the permeability of the soil and restrict root penetration. Deep subsoiling in fall helps to break up the compacted layers.

This unit is well suited to use as irrigated pasture. Irrigation water can be applied by the border, corrugation, or sprinkler methods.

Population growth has resulted in increased construction of homes on this unit. The main limitations for homesite development are the hazard of frost action in the silty overlying material and the hazards of cutbanks caving in and seepage in the underlying extremely stony sand. Frost action potential is a limitation in maintaining roads, streets, driveways, and sidewalks. Cutbanks are not stable and are subject to slumping. If the density of housing is moderate to high, community sewage systems help to prevent contamination of ground water as a result of seepage from onsite sewage disposal systems.

This map unit is in capability subclasses IIc, irrigated, and VIc, nonirrigated.

22—Broxon silt loam, 2 to 4 percent slopes. This very deep, well drained soil is on terraces. It formed in loess and silty alluvium overlying flood-deposited sand, gravel, cobbles, and stones of mixed mineralogy. Elevation is about 4,400 to 4,500 feet. The average annual precipitation is about 10 inches, the average annual air temperature is about 47 degrees F, and the average frost-free period is about 120 days.

Typically, the surface layer is pale brown, calcareous silt loam 8 inches thick. The upper 17 inches of the underlying material is white and pale brown, calcareous silt loam, and the lower part to a depth of 60 inches or more is multicolored extremely stony sand. Depth to extremely stony sand ranges from 20 to 40 inches.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 10 percent is Bahem silt loam on terraces. The remaining 5 percent is small areas of Broncho cobbly loam, soils that are similar to this Broxon soil but have a weakly cemented pan at a depth of 20 to 30 inches, and soils that have slopes of more than 4 percent.

Permeability of this Broxon soil is moderate to a depth of 25 inches and very rapid below this depth. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight. If this soil is irrigated, runoff is medium and the hazard of water erosion is moderate. The hazard of soil blowing is slight.

Most areas of this unit are used as irrigated cropland and for pasture. A few areas are used for homesite development.

This unit is well suited to irrigated crops. It is used for the production of wheat, barley, potatoes, and alfalfa hay. It is limited mainly by the moderate hazard of erosion. Sprinkler irrigation is a suitable method of applying water. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion. Irrigation water needs to be applied at a rate that insures optimum production without increasing deep percolation, runoff, and erosion. Maintaining crop residue on or near the surface reduces runoff and helps to maintain soil tilth and organic matter content. Tillage should be kept to a minimum.

The soil in this unit is very susceptible to the formation of a tillage pan and other compacted layers, which reduce the permeability of the soil and restrict root penetration. Deep subsoiling in fall helps to break up the compacted layers.

This unit is well suited to use as irrigated pasture. It has few limitations. Irrigation water can be applied by the border, corrugation, or sprinkler methods.

Population growth has resulted in increased construction of homes on this unit. The main limitations for homesite development are the hazard of frost action in the silty overlying material and the hazards of cutbanks caving in and seepage in the underlying extremely stony sand. Frost action potential is a limitation in maintaining roads, streets, driveways, and sidewalks. Cutbanks are not stable and are subject to slumping. If the density of housing is moderate to high, community sewage systems help to prevent contamination of ground water as a result of seepage from onsite sewage disposal systems.

This map unit is in capability subclasses IIe, irrigated, and VIc, nonirrigated.

23—Camelback-Cedarhill, high precipitation-Lanoak complex, 20 to 50 percent slopes. This map unit is on mountainsides. The native vegetation is mainly shrubs and grasses. Elevation is about 5,500 to 6,500 feet. The average annual precipitation is about 17 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 80 days.

This unit is about 30 percent Camelback very cobbly silt loam, about 30 percent Cedarhill very cobbly silt loam, high precipitation, and about 20 percent Lanoak silt loam. The Camelback soil is dominantly on north- and east-facing, convex side slopes, the Cedarhill soil is on south- and west-facing side slopes, and the Lanoak soil is on concave, north- and east-facing side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is Valmar very cobbly silt loam on the upper part of the slopes and on ridgetops, about 5 percent is Hades gravelly silt loam on concave, north- and east-facing side slopes, and about 5 percent is Wursten gravelly silt loam on south- and west-facing side slopes. The remaining 5 percent is small areas of Pavohroo silt loam, Rock outcrop, Yago extremely stony silty clay loam, Ireland extremely stony silt loam, Moonlight silt loam, and a very deep soil along drainageways.

The Camelback soil is deep and well drained. It formed in alluvium and colluvium derived dominantly from sedimentary and metasedimentary rock. Typically, the surface layer is dark brown very cobbly silt loam 21 inches thick. The subsoil is dark brown and yellowish brown extremely cobbly silt loam 21 inches thick. Bedrock is at a depth of 42 inches. Depth to bedrock ranges from 40 to 60 inches.

Permeability of the Camelback soil is moderate. Available water capacity is low. Effective rooting depth is 40 to 60 inches. Runoff is very rapid, and the hazard of water erosion is very high.

The Cedarhill soil is very deep and well drained. It formed in alluvium and colluvium derived dominantly from sedimentary and metasedimentary rock.

Typically, the surface layer is brown, calcareous very cobbly silt loam 9 inches thick. The upper 19 inches of the underlying material is very pale brown and light yellowish brown, calcareous very cobbly silt loam, and the lower part to a depth of 60 inches or more is light yellowish brown, calcareous very cobbly loam.

Permeability of the Cedarhill soil is moderate. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Lanoak soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. Typically, the surface layer is dark grayish brown silt loam 22 inches thick. The subsoil is grayish brown and pale brown silt loam 22 inches thick. The substratum to a depth of 60 inches or more is light gray, calcareous silt loam.

Permeability of the Lanoak soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical on this unit because of the steepness of slope and the very cobbly surface of the Camelback and Cedarhill soils.

This map unit is in capability subclass VIIe.

24—Camelback-Greys complex, 20 to 30 percent slopes. This map unit is on fan terraces and mountain foot slopes. The native vegetation is mainly shrubs and grasses on the Camelback soil and trees and grasses on the Greys soil. Elevation is about 5,500 to 6,500 feet. The average annual precipitation is about 19 inches, the average annual air temperature is about 41 degrees F, and the average frost-free period is about 65 days.

This unit is about 40 percent Camelback gravelly silt loam and about 35 percent Greys silt loam. The Camelback soil is dominantly on south- and west-facing, convex side slopes, and the Greys soil is on north- and east-facing, concave side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 5 percent is Lanoak silt loam in concave pockets on south- and west-facing side slopes, about 5 percent is Camelback extremely stony silt loam on toe slopes, and about 5 percent is Valmar very cobbly silt loam on ridgetops and near areas of Rock outcrop. The remaining 10 percent is small areas of Rock outcrop, soils that have slopes of less than 20 percent or more than 30 percent, and Trailcreek very fine sandy loam.

The Camelback soil is very deep and well drained. It formed in alluvium and colluvium derived dominantly from quartzite. Typically, the surface layer is dark brown gravelly silt loam 21 inches thick. The upper 9 inches of the subsoil is dark brown extremely gravelly silt loam, and the lower part to a depth of 60 inches or more is yellowish brown extremely gravelly silt loam.

Permeability of the Camelback soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Greys soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. Typically, an intermittent duff layer of leaves, twigs, and grasses about 3 inches thick is on the surface. The surface layer is dark grayish brown silt loam 8 inches thick. The upper 4 inches of the next layer is light brownish gray silt loam, and the lower part to a depth of 19 inches is 60 percent light brownish gray silt loam and 40 percent brown silt loam. The subsoil to a depth of 60 inches or more is brown, light yellowish brown, and pale brown silt loam.

Permeability of the Greys soil is moderately slow. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland and grazeable woodland.

The potential natural plant community on the Camelback soil is mainly mountain big sagebrush and bluebunch wheatgrass. The potential natural plant community on the Greys soil is mainly an overstory of quaking aspen with an understory dominated by pine reedgrass.

The Camelback soil is well suited to use as rangeland. Use of mechanical equipment such as rangeland plows and drills is not practical on this unit because of the steepness of slope and the very high hazard of water erosion. Nonmechanical treatment practices may be more suitable.

The Greys soil is well suited to the production of understory plants suitable for grazing. It can produce additional forage for livestock and wildlife for 10 to 20 years after the canopy is opened by logging, fire, or some other disturbance. During this period annual production of understory ranges from 3,000 pounds of air-dry vegetation per acre to less than 300 pounds per acre as the canopy closes. In spring, cold soil temperatures limit early plant growth. Grazing should be delayed until the plants have achieved sufficient growth to withstand grazing pressure.

The Greys soil is also suited to the production of quaking aspen for wood products such as fenceposts and firewood. On the basis of an 80-year site curve, the average site index for quaking aspen is 65. Yield tables indicate that the maximum average annual growth is 36 cubic feet per acre of quaking aspen at 80 years of age. Most of the aspen harvested is used as firewood.

This map unit is in capability subclass VIe.

25—Camelback-Hades complex, 6 to 20 percent slopes. This map unit is on mountain foot slopes and fan terraces. The native vegetation is mainly shrubs and grasses. Elevation is about 5,200 to 7,000 feet. The average annual precipitation is about 18 inches, the average annual air temperature is about 41 degrees F, and the average frost-free period is about 70 days.

This unit is about 50 percent Camelback extremely stony silt loam and about 30 percent Hades gravelly silt loam. The Camelback soil is on convex side slopes, and the Hades soil is on concave side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is Lanoak silt loam on concave, north-facing side slopes, about 5 percent is soils that are similar to the Hades soil but are in drainageways, about 5 percent is Moonlight silt loam on concave side slopes along drainageways, and about 5 percent is soils that have slopes of more than 20 percent.

The Camelback soil is very deep and well drained. It formed in alluvium derived dominantly from quartzite. Typically, the surface layer is dark brown extremely stony silt loam 21 inches thick. The upper 9 inches of the subsoil is dark brown extremely cobbly silt loam, and the lower part to a depth of 60 inches or more is yellowish brown extremely cobbly silt loam.

Permeability of the Camelback soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

The Hades soil is very deep and well drained. It formed in mixed alluvium derived from loess and quartzite. Typically, the surface layer is dark grayish brown and dark brown gravelly silt loam 7 inches thick. The upper 7 inches of the subsoil is dark brown gravelly silt loam, and the lower part to a depth of 60 inches or more is brown, yellowish brown, and light yellowish brown gravelly silty clay loam.

Permeability of the Hades soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

This unit is used as rangeland.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly bluebunch wheatgrass and mountain big sagebrush. Mechanical equipment such as rangeland plows and drills is suitable for use on the Hades soil, but its use is limited on the Camelback soil because of the extremely stony surface.

This map unit is in capability subclass VIIs.

26—Camelback-Valmar-Hades complex, 20 to 30 percent slopes. This map unit is on mountainsides. The native vegetation is mainly shrubs and grasses. Elevation is about 5,500 to 6,500 feet. The average annual precipitation is about 18 inches, the average annual air temperature is about 41 degrees F, and the average frost-free period is about 75 days.

This unit is about 40 percent Camelback gravelly silt loam, about 20 percent Valmar very cobbly silt loam, and about 20 percent Hades gravelly silt loam. The Camelback soil is dominantly on convex side slopes, the Valmar soil is on ridgetops and near areas of Rock outcrop, and the Hades soil is dominantly on concave side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 10 percent is Moonlight silt loam on north- and east-facing, concave side slopes and about 5 percent is Rexburg silt loam on the lower lying, loess-covered side slopes. The remaining 5 percent is small areas of Rock outcrop and soils that have slopes of less than 20 percent or more than 30 percent.

The Camelback soil is deep and well drained. It formed in alluvium, colluvium, and residuum derived dominantly from quartzite. Typically, the surface layer is dark brown gravelly silt loam 21 inches thick. The subsoil is dark brown and yellowish brown extremely cobbly silt loam 21 inches thick. Quartzite is at a depth of 42 inches. Depth to bedrock ranges from 40 to 60 inches.

Permeability of the Camelback soil is moderate. Available water capacity is low. Effective rooting depth is 40 to 60 inches. Runoff is very rapid, and the hazard of water erosion is very high.

The Valmar soil is moderately deep and well drained. It formed in alluvium, colluvium, and residuum derived from quartzite. Typically, the surface layer is dark brown and brown very cobbly silt loam 9 inches thick. The upper 5 inches of the subsoil is yellowish brown very cobbly silt loam, and the lower 10 inches is yellowish brown extremely stony silt loam. Quartzite is at a depth of 24 inches. Depth to bedrock ranges from 20 to 40 inches.

Permeability of the Valmar soil is moderate. Available water capacity is very low. Effective rooting depth is 20 to 40 inches. Runoff is very rapid, and the hazard of water erosion is very high.

The Hades soil is very deep and well drained. It formed in mixed alluvium derived from loess and quartzite. Typically, the surface layer is dark grayish brown and dark brown gravelly silt loam 7 inches thick. The upper 7 inches of the subsoil is dark brown gravelly silt loam, and the lower part to a depth of 60 inches or more is brown, yellowish brown, and light yellowish brown gravelly silty clay loam.

Permeability of the Hades soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly bluebunch wheatgrass and mountain big sagebrush. This unit is poorly suited to the use of mechanical equipment such as rangeland plows and drills. The main limitations are the very cobbly surface of the Valmar soil and the very high hazard of erosion. Nonmechanical treatment practices may be more suitable.

This map unit is in capability subclass VIe.

27—Camelback Variant-Valmar Variant complex, 20 to 60 percent slopes. This map unit is on mountainsides and ridges. The native vegetation is mainly shrubs and grasses. Elevation is about 7,500 to 9,200 feet. The average annual precipitation is about 20 inches, the average annual air temperature is about 39 degrees F, and the average frost-free period is less than 70 days.

This unit is about 45 percent Camelback Variant gravelly silt loam and about 30 percent Valmar Variant very stony silt loam. The Camelback Variant soil is in slightly convex to concave, south- and west-facing side slopes. The Valmar Variant soil is on convex, south- and west-facing side slopes and ridgetops.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is Scout Variant gravelly silt loam in concave pockets; about 5 percent is Rock outcrop and talus, including vertical cliffs 50 to 750 feet high; and about 5 percent is soils that are similar to the Valmar Variant soil but are less than 20 inches deep to bedrock and are on windswept ridges. The remaining 5 percent is small areas of a soil that is similar to the Valmar Variant soil but is calcareous throughout, Camelback extremely stony silt loam, Ireland extremely stony silt loam, and soils that have slopes of less than 20 percent or more than 60 percent.

The Camelback Variant soil is very deep and well drained. It formed in alluvium and colluvium derived dominantly from quartzite. Typically, the surface layer is very dark grayish brown and dark brown gravelly silt loam 10 inches thick. The upper 21 inches of the subsoil is yellowish brown very cobbly loam, and the lower part to a depth of 60 inches or more is yellowish brown extremely cobbly loam.

Permeability of the Camelback Variant soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Valmar Variant soil is moderately deep and well drained. It formed in alluvium, colluvium, and residuum derived dominantly from quartzite. Typically, the surface layer is dark brown very stony silt loam 9 inches thick. The subsoil is dark yellowish brown and light yellowish brown very stony loam and extremely stony loam 15 inches thick. Quartzite bedrock is at a depth of 24 inches. Depth to bedrock ranges from 20 to 40 inches.

Permeability of the Valmar Variant soil is moderate. Available water capacity is very low. Effective rooting depth is 20 to 40 inches. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is suited to use as rangeland. The potential natural plant community on the unit is mainly subalpine big sagebrush, mountain snowberry, and slender wheatgrass. Use of mechanical equipment such as rangeland plows and drills is not practical on this unit because of the steepness of slope and very stony surface of the Valmar Variant soil. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. In spring, cold soil temperatures limit early plant growth. Grazing should be delayed until the plants have achieved sufficient growth to withstand grazing pressure.

This map unit is in capability subclass VIIe.

28—Cedarhill very cobbly silt loam, 30 to 60 percent slopes. This very deep, well drained soil is on south- and west-facing mountainsides and foothills (fig. 3). It formed in alluvium and colluvium derived from limestone and other related sedimentary and metasedimentary rock. The native vegetation is mainly small trees, shrubs, and grasses. Elevation is about 5,000 to 6,000 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 85 days.

Typically, the surface layer is brown, calcareous very cobbly silt loam 9 inches thick. The upper 19 inches of

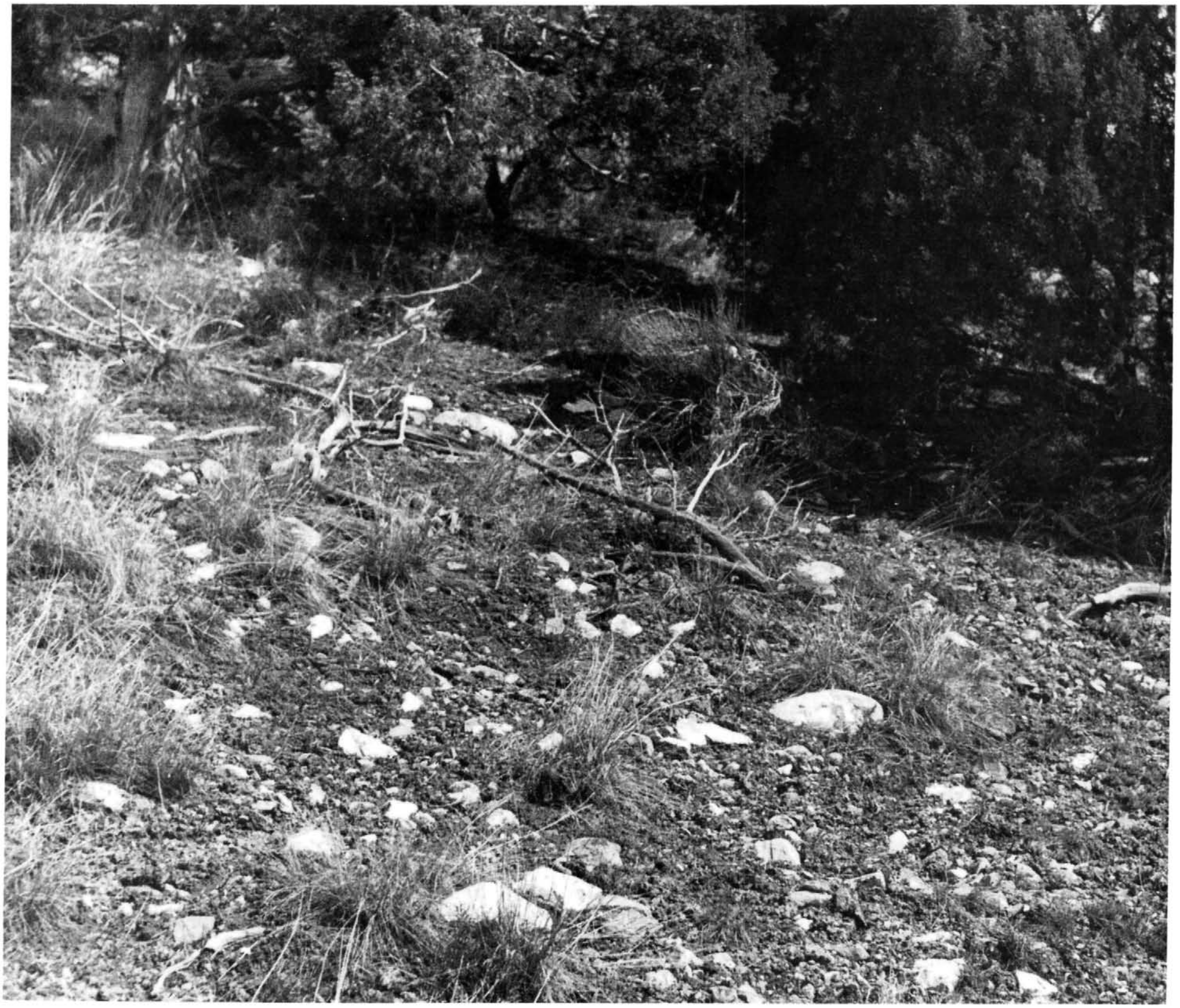

Figure 3.—Area of Cedarhill very cobbly silt loam, 30 to 60 percent slopes.

the underlying material is very pale brown and light yellowish brown, calcareous very cobbly silt loam, and the lower part to a depth of 60 inches or more is light yellowish brown, calcareous very cobbly loam.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 5 percent is Rock outcrop on ridgetops, about 5 percent is soils that are similar to the Cedarhill soil but are less than 40 inches deep to bedrock and are near areas of Rock outcrop, about 5 percent is Ririe silt loam on north- and east-facing side slopes and in concave pockets, and about 5 percent is soils that have slopes of less than 30 percent. The remaining 5 percent is small areas of volcanic ash outcrops and Trailcreek very fine sandy loam.

Permeability of this Cedarhill soil is moderate. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used primarily as grazeable woodland. A few areas are used as woodland.

This unit is suited to use as grazeable woodland. The potential natural plant community on the unit is mainly Utah juniper, bluebunch wheatgrass, and Indian ricegrass. The main limitations are the steepness of slope and the small amount of desirable forage. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Livestock watering facilities need to be developed or improved for summer and fall use of this unit. Use of mechanical equipment such as rangeland plows and drills is not practical on this unit because of the steepness of slope and the very cobbly surface of the soil.

In a few areas, some Utah juniper is cut for fenceposts and firewood. On the basis of a basal area attained when the diameter of trees at a height of 1 foot averages 5 inches, the average site index for Utah juniper is 105. Yield tables indicate that the maximum average annual growth is 31 cubic feet per acre of Utah juniper at 100 years of age.

This map unit is in capability subclass VIIe.

29—Cedarhill-Ireland-Rock outcrop complex, 30 to 60 percent slopes. This map unit is on mountainsides. The native vegetation is mainly small trees, shrubs, and grasses. Elevation is about 5,200 to 7,000 feet. The average annual precipitation is about 16 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 80 days.

This unit is about 30 percent Cedarhill very cobbly silt loam, about 25 percent Ireland extremely stony silt loam, and about 20 percent Rock outcrop. The Cedarhill soil is on plane to slightly concave side slopes, the Ireland soil is on convex side slopes, and Rock outcrop is on convex side slopes and near ridgetops. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 5 percent is Pavohroo silt loam on concave, north- and east-facing side slopes, about 5 percent is Camelback very cobbly silt loam on concave side slopes, about 5 percent is soils that are similar to the Ireland soil but are less than 20 inches deep to bedrock and are on convex side slopes and ridgetops, and about 5 percent is Greys silt loam on concave, north- and east-facing foot slopes. The remaining 5 percent is small areas of Coalbank very fine sandy loam, Trailcreek very fine sandy loam, and soils that have slopes of less than 30 percent.

The Cedarhill soil is very deep and well drained. It formed in alluvium and colluvium derived dominantly from limestone and other related sedimentary and metasedimentary rock. Typically, the surface layer is brown, calcareous very cobbly silt loam 9 inches thick. The upper 19 inches of the underlying material is very pale brown and light yellowish brown, calcareous very cobbly silt loam, and the lower part to a depth of 60 inches or more is light yellowish brown, calcareous very cobbly loam.

Permeability of the Cedarhill soil is moderate. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Ireland soil is moderately deep and well drained. It formed in alluvium, colluvium, and residuum derived dominantly from interbedded dolomite, limestone, and sandstone. Typically, the surface layer is brown extremely stony silt loam 7 inches thick. The upper 5 inches of the subsoil is brown very stony silt loam, and the lower 18 inches is brown, calcareous extremely stony silt loam. Dolomite is at a depth of 30 inches. Depth to bedrock ranges from 20 to 40 inches.

Permeability of the Ireland soil is moderate. Available water capacity is very low. Effective rooting depth is 20 to 40 inches. Runoff is very rapid, and the hazard of water erosion is very high.

Rock outcrop consists of areas of exposed dolomite and limestone. It is near ridgetops and on very convex side slopes.

The Cedarhill soil is used as grazeable woodland and woodland. The Ireland soil is used as rangeland.

This unit is suited to use as grazeable woodland and rangeland. The potential natural plant community on the Cedarhill soil is mainly bluebunch wheatgrass, Indian ricegrass, and Utah juniper. The potential natural plant community on the Ireland soil is mainly curlleaf mountainmahogany, mountain big sagebrush, and bluebunch wheatgrass. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Livestock watering facilities need to be developed or improved for summer and fall use of this unit. Use of mechanical equipment such as rangeland plows and drills is not practical on this unit because of the steepness of slope, the very cobbly surface of the Cedarhill soil, the extremely stony surface of the Ireland soil, and the areas of Rock outcrop.

In a few areas of the Cedarhill soil, some Utah juniper is cut for fenceposts and firewood. On the basis of a basal area attained when the diameter of trees at a height of 1 foot averages 5 inches, the average site index for Utah juniper is 105. Yield tables indicate that the maximum average annual growth is 31 cubic feet per acre of Utah juniper at 100 years of age.

This map unit is in capability subclass VIIs.

30—Cedarhill-Ririe-Watercanyon complex, 30 to 60 percent slopes. This map unit is on foothills and mountainsides. The native vegetation is mainly small trees, shrubs, and grasses. Elevation is about 4,900 to 6,500 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 90 days.

This unit is about 35 percent Cedarhill very cobbly silt loam, about 25 percent Ririe silt loam, and about 20 percent Watercanyon silt loam. The Cedarhill soil is on convex, south- and west-facing side slopes, the Ririe soil is on plane or slightly concave, north- and east-facing side slopes, and the Watercanyon soil is on plane or slightly concave, south- and west-facing side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is Valmar very cobbly silt loam on ridgetops, about 5 percent is Camelback gravelly silt loam on north- and east-facing, convex side slopes, and about 5 percent is soils that are less than 20 inches deep to bedrock and are on ridgetops. The remaining 5 percent is small areas of Rock outcrop, volcanic ash outcrops, Trailcreek very fine sandy loam, soils that have slopes of less than 30 percent, and very deep soils in drainageways.

The Cedarhill soil is very deep and well drained. It formed in alluvium and colluvium derived dominantly from limestone and related sedimentary and metasedimentary rock. Typically, the surface layer is brown, calcareous very cobbly silt loam 9 inches thick. The upper 19 inches of the underlying material is very pale brown and light yellowish brown, calcareous very cobbly silt loam, and the lower part to a depth of 60 inches or more is light yellowish brown, calcareous very cobbly loam.

Permeability of the Cedarhill soil is moderate. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Ririe soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. Typically, the surface layer is brown silt loam 12 inches thick. The underlying material to a depth of 60 inches or more is pale brown and very pale brown, calcareous silt loam.

Permeability of the Ririe soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Watercanyon soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. Typically, the surface layer is pale brown, calcareous silt loam 7 inches thick. The subsoil is pale brown, calcareous silt loam 9 inches thick. The substratum to a depth of 60 inches or more is pale brown, light gray, and very pale brown, calcareous silt loam.

Permeability of the Watercanyon soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Cedarhill soil is used as grazeable woodland and woodland. The Ririe and Watercanyon soils are used as rangeland.

This unit is suited to use as grazeable woodland and rangeland. The potential natural plant community on the Cedarhill soil is mainly Utah juniper, bluebunch wheatgrass, and Indian ricegrass. The potential natural plant community on the Ririe soil is mainly mountain big sagebrush and bluebunch wheatgrass. The potential natural plant community on the Watercanyon soil is mainly mountain big sagebrush, bluebunch wheatgrass, Thurber needlegrass, and arrowleaf balsamroot. Use of forage by livestock on parts of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical on this unit because of the steepness of slope and the very cobbly surface of the Cedarhill soil.

In a few areas of the Cedarhill soil, some Utah juniper is cut for fenceposts and firewood. On the basis of a basal area attained when the diameter of trees at a height of 1 foot averages 5 inches, the average site index for Utah juniper is 105. Yield tables indicate that the maximum average annual growth is 31 cubic feet per acre of Utah juniper at 100 years of age.

This map unit is in capability subclass VIIe.

31—Cedarhill-Rock outcrop complex, 30 to 60 percent slopes. This map unit is on mountainsides. The native vegetation is mainly small trees, shrubs, and grasses. Elevation is 5,000 to 6,500 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 80 days.

This unit is about 45 percent Cedarhill very cobbly silt loam and about 30 percent Rock outcrop. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is Ridgecrest extremely stony silt loam on convex ridges and near areas of Rock outcrop, about 5 percent is Watercanyon silt loam in slightly concave areas, and about 5 percent is Hondoho cobbly silt loam on north- and east-facing side slopes. The remaining 5 percent is small areas of soils that are similar to the Cedarhill soil but that have color hues of 5YR or redder and soils that have slopes of less than 30 percent or more than 60 percent.

The Cedarhill soil is very deep and well drained. It formed in alluvium and colluvium derived dominantly from limestone and other related sedimentary and metasedimentary rock. Typically, the surface layer is brown, calcareous very cobbly silt loam 9 inches thick. The upper 19 inches of the underlying material is very pale brown and light yellowish brown, calcareous very cobbly silt loam, and the lower part to a depth of 60 inches or more is light yellowish brown, calcareous very cobbly loam.

Permeability of the Cedarhill soil is moderate. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

Rock outcrop consists of areas of exposed sandstone, dolomite, and limestone. It is weathered and fractured and is most commonly on ridgetops and in convex areas on secondary ridges.

This unit is used as grazeable woodland and woodland.

This unit is suited to use as grazeable woodland. The potential natural plant community on the unit is mainly Utah juniper, bluebunch wheatgrass, and Indian ricegrass. The main limitations are the steepness of slope, and areas of Rock outcrop. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Livestock watering facilities need to be developed or improved for summer and fall use of this unit. Use of mechanical equipment such as rangeland plows and drills is not practical on this unit because of the steepness of slope, the areas of Rock outcrop, and the very cobbly surface of the Cedarhill soil.

In a few areas of the Cedarhill soil, some Utah juniper is cut for fenceposts and firewood. On the basis of a basal area attained when the diameter of trees at a height of 1 foot averages 5 inches, the average site index for Utah juniper is 105. Yield tables indicate that the maximum average annual growth is 31 cubic feet per acre of Utah juniper at 100 years of age.

This map unit is in capability subclass VIIe.

32—Cedarhill, high precipitation-Camelback-Moonlight complex, 20 to 50 percent slopes. This map unit is on mountainsides and foot slopes. The native vegetation is mainly shrubs and grasses. Elevation is 5,000 to 6,500 feet.

This unit is about 30 percent Cedarhill very gravelly silt loam, high precipitation, about 25 percent Camelback gravelly silt loam, and about 20 percent Moonlight silt loam. The Cedarhill soil is on south- and west-facing, convex side slopes, the Camelback soil is on slightly convex to slightly concave, north- and east-facing side slopes, and the Moonlight soil is in concave pockets near drainageways on north- and east-facing side slopes . The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is Lanoak silt loam in concave pockets on foot slopes, about 5 percent is a soil that is less than 20 inches deep to fractured bedrock and is on ridgetops and convex side slopes, and about 5 percent is a very deep soil along drainageways. The remaining 5 percent is small areas of Rock outcrop, Manila silt loam, Yago extremely stony silty clay loam, and soils that have slopes of less than 20 percent.

The Cedarhill soil is very deep and well drained. It formed in alluvium and colluvium derived from sedimentary and metasedimentary rock. The average annual precipitation is about 16 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 80 days. Typically, the surface layer is brown, calcareous very gravelly silt loam 9 inches thick. The upper 19 inches of the underlying material is very pale brown and light yellowish brown, calcareous extremely gravelly silt loam, and the lower part to a depth of 60 inches or more is light yellowish brown, calcareous extremely gravelly loam.

Permeability of the Cedarhill soil is moderate. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Camelback soil is deep and well drained. It formed in alluvium, colluvium, and residuum derived dominantly from quartzite. The average annual precipitation is about 16 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 75 days. Typically, the surface layer is dark brown gravelly silt loam 21 inches thick. The subsoil is dark brown and yellowish brown extremely cobbly silt loam 21 inches thick. Quartzite bedrock is at a depth of 42 inches. Depth to bedrock ranges from 40 to 60 inches.

Permeability of the Camelback soil is moderate. Available water capacity is low. Effective rooting depth is

40 to 60 inches. Runoff is very rapid, and the hazard of water erosion is very high.

The Moonlight soil is very deep and well drained. It formed in alluvium derived from loess and from sedimentary and metasedimentary rock. The average annual precipitation is about 18 inches, the average annual air temperature is about 38 degrees F, and the average frost-free period is about 50 days. Typically, the surface is covered with an intermittent duff layer of leaves, twigs, and grasses about 2 inches thick. The surface layer is very dark grayish brown, dark grayish brown, and dark brown silt loam 24 inches thick. The subsoil to a depth of 60 inches or more is light yellowish brown and brown silt loam.

Permeability of the Moonlight soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is suited to use as rangeland. The potential natural plant community on the Cedarhill and Camelback soils is mainly bluebunch wheatgrass and mountain big sagebrush. The potential natural plant community on the Moonlight soil is mainly mountain brome, common chokecherry, Rocky Mountain maple, and quaking aspen. Use of forage by livestock on parts of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical on this unit because of the steepness of slope.

This map unit is in capability subclass VIIe.

33—Cedarhill, high precipitation-Hades-Ricrest complex, 20 to 50 percent slopes. This map unit is on foothills and mountainsides. The native vegetation is mainly shrubs and grasses. Elevation is about 5,500 to 6,500 feet. The average annual precipitation is about 16 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 80 days.

This unit is about 40 percent Cedarhill very gravelly silt loam, high precipitation, about 25 percent Hades gravelly silt loam, and about 20 percent Ricrest gravelly silt loam. The Cedarhill soil is on south- and west-facing, convex side slopes, the Hades soil is on north- and east-facing, concave side slopes, and the Ricrest soil is on south- and west-facing foot slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Manila silt loam on south- and west-facing, concave side slopes, and about 5 percent is Moonlight silt loam on concave, north- and east-facing side slopes. The remaining 5 percent is small areas of Ririe silt loam, Rock outcrop, Ridgecrest extremely stony silt loam, Coalbank very fine sandy loam, Trailcreek very fine sandy loam, and a very deep soil along drainageways.

The Cedarhill soil is very deep and well drained. It formed in alluvium and colluvium derived from limestone and other sedimentary and metasedimentary rock. Typically, the surface layer is brown, calcareous very gravelly silt loam 9 inches thick. The upper 19 inches of the underlying material is very pale brown and light yellowish brown, calcareous extremely gravelly silt loam, and the lower part to a depth of 60 inches or more is light yellowish brown, calcareous extremely gravelly loam.

Permeability of the Cedarhill soil is moderate. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Hades soil is very deep and well drained. It formed in mixed alluvium derived from loess and quartzite. Typically, the surface layer is dark grayish brown and dark brown gravelly silt loam 7 inches thick. The upper 7 inches of the subsoil is dark brown gravelly silt loam, and the lower part to a depth of 60 inches or more is brown, yellowish brown, and light yellowish brown gravelly silty clay loam.

Permeability of the Hades soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Ricrest soil is very deep and well drained. It formed in alluvium and colluvium derived from mixed sources, dominantly quartzite and limestone. Typically, the surface layer is dark grayish brown and dark brown gravelly silt loam 10 inches thick. The upper 4 inches of the subsoil is brown gravelly silt loam, and the lower 10 inches is brown, calcareous gravelly silt loam. The substratum to a depth of 60 inches or more is pale brown and very pale brown, calcareous gravelly silt loam.

Permeability of the Ricrest soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical on this unit because of the steepness of slope.

This map unit is in capability subclass VIIe.

34—Cedarhill, high precipitation-Hondoho-Arbone complex, 20 to 50 percent slopes. This map unit is in south- and west-facing areas on terrace breaks and mountain foot slopes. The native vegetation is mainly shrubs and grasses. Elevation is about 4,800 to 6,000 feet. The average annual precipitation is about 16 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 85 days.

This unit is about 45 percent Cedarhill very cobbly silt loam, high precipitation, about 20 percent Hondoho cobbly silt loam, and about 15 percent Arbone gravelly silt loam. The Cedarhill soils are on convex side slopes and ridges, the Hondoho soils are on slightly concave side slopes, and the Arbone soil is on the lower part of the slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 10 percent is Watercanyon silt loam on slightly convex side slopes and about 5 percent is Ririe silt loam on concave side slopes. The remaining 5 percent is small areas of Bancroft silt loam, Rock outcrop, and soils that have slopes of less than 20 percent or more than 50 percent.

The Cedarhill soil is very deep and well drained. It formed in alluvium and colluvium derived from various kinds of sedimentary and metasedimentary rock. Slope is 20 to 50 percent. Typically, the surface layer is brown, calcareous very cobbly silt loam 9 inches thick. The upper 19 inches of the underlying material is very pale brown and light yellowish brown, calcareous very cobbly silt loam, and the lower part to a depth of 60 inches or more is light yellowish brown, calcareous very cobbly loam.

Permeability of the Cedarhill soil is moderate. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Hondoho soil is very deep and well drained. It formed in alluvium derived from mixed sources. Slope is 20 to 50 percent. Typically, the surface layer is grayish brown cobbly silt loam 8 inches thick. The subsoil is brown, calcareous cobbly silt loam 7 inches thick. The substratum to a depth of 60 inches or more is light yellowish brown and pale brown, calcareous very cobbly sandy clay loam.

Permeability of the Hondoho soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Arbone soil is very deep and well drained. It formed in silty alluvium derived from mixed sources. Slope is 20 to 30 percent. Typically, the surface layer is grayish brown gravelly silt loam 9 inches thick. The subsoil is brown and pale brown, calcareous gravelly silt loam 9 inches thick. The substratum to a depth of 60 inches or more is very pale brown, calcareous gravelly silt loam.

Permeability of the Arbone soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is well suited to use as rangeland. The potential natural plant community on this unit is mainly mountain big sagebrush and bluebunch wheatgrass. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical on this unit because of the very cobbly surface of the Cedarhill soil and because of the steepness of slope.

This map unit is in capability subclass VIIe.

35—Cedarhill, high precipitation-Hondoho-Ridgecrest complex, 20 to 50 percent slopes. This map unit is on mountainsides and foothills. The native vegetation is mainly shrubs and grasses. Elevation is about 5,100 to 6,500 feet. The average annual precipitation is about 16 inches, the average annual air temperature is about 44 degrees F, and the average frost-tree period is about 75 days.

This unit is about 35 percent Cedarhill very cobbly silt loam, high precipitation, about 30 percent Hondoho cobbly silt loam, and about 20 percent Ridgecrest extremely stony silt loam. The Cedarhill soil is on south- and west-facing side slopes, the Hondoho soil is on foot slopes and on concave side slopes, and the Ridgecrest soil is near ridgetops and on convex side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Rock outcrop, which is generally near ridgetops but it may occur anywhere in the unit, and about 5 percent is Rexburg silt loam on foot slopes. The remaining 5 percent is small areas of Manila silt loam, soils that are similar to the Ridgecrest soil but are less than 20 inches deep to bedrock, and soils that have slopes of less than 20 percent.

The Cedarhill soil is very deep and well drained. It formed in alluvium and colluvium derived dominantly from limestone and related sedimentary and metasedimentary rock. Typically, the surface layer is brown, calcareous very cobbly silt loam 9 inches thick. The upper 19 inches of the underlying material is very pale brown and light yellowish brown, calcareous very cobbly silt loam, and the lower part to a depth of 60 inches or more is light yellowish brown, calcareous very cobbly loam.

Permeability of the Cedarhill soil is moderate. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Hondoho soil is very deep and well drained. It formed in alluvium derived from mixed sources. Typically, the surface layer is grayish brown cobbly silt loam 8 inches thick. The subsoil is brown, calcareous cobbly silt loam 7 inches thick. The substratum to a depth of 60 inches or more is light yellowish brown and pale brown, calcareous very cobbly loam.

Permeability of the Hondoho soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Ridgecrest soil is moderately deep and well drained. It formed in alluvium and colluvium derived dominantly from limestone. Typically, the surface layer is dark grayish brown and brown, calcareous extremely stony silt loam 14 inches thick. The underlying material to a depth of 27 inches is pale brown, calcareous extremely stony silt loam. Limestone is at a depth of 27 inches. Depth to bedrock ranges from 20 to 40 inches.

Permeability of the Ridgecrest soil is moderate. Available water capacity is very low. Effective rooting depth is 20 to 40 inches. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is suited to use as rangeland. The potential natural plant community on this unit is mainly bluebunch wheatgrass and mountain big sagebrush. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical on this unit because of the very cobbly surface of the Cedarhill soil, the extremely stony surface of the Ridgecrest soil, and the steepness of slope.

This map unit is in capability subclass VIIe.

36—Cedarhill, high precipitation-Manila complex, 30 to 50 percent slopes. This map unit is on mountainsides and foothills. The native vegetation is mainly shrubs and grasses. Elevation is about 5,300 to 6,300 feet. The average annual precipitation is about 17 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 75 days.

This unit is about 40 percent Cedarhill very cobbly silt loam, high precipitation, and about 35 percent Manila silt loam. The Cedarhill soil is generally on convex, south- and west-facing side slopes and ridgetops, and the Manila soil is generally on concave, north- and east-facing side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 5 percent is Hades gravelly silt loam, about 5 percent is Bancroft silt loam, and about 5 percent is Trailcreek very fine sandy loam and outcrops of volcanic ash or tuff. The remaining 10 percent is small areas of Yago extremely stony silty clay loam, soils that are similar to the Manila soil but are calcareous throughout, and soils that have slopes of less than 30 percent or more than 50 percent.

The Cedarhill soil is very deep and well drained. It formed in alluvium and colluvium derived dominantly from limestone and related sedimentary and metasedimentary rock. Typically, the surface layer is brown, calcareous very cobbly silt loam 9 inches thick. The upper 19 inches of the underlying material is very pale brown and light yellowish brown, calcareous very cobbly silt loam, and the lower part to a depth of 60 inches or more is light yellowish brown, calcareous very cobbly loam.

Permeability of the Cedarhill soil is moderate. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Manila soil is very deep and well drained. It formed in alluvium derived from sedimentary and metasedimentary rock and loess. Typically, the upper part of the surface layer is grayish brown silt loam 7 inches thick and the lower part is grayish brown silty clay loam 8 inches thick. The subsoil is yellowish brown and dark brown silty clay and silty clay loam 33 inches thick. The substratum to a depth of 60 inches or more is pale brown and light yellowish brown, calcareous silt loam.

Permeability of the Manila soil is slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical on this unit because of the steepness of slope, the very high hazard of water erosion, and the very cobbly surface of the Cedarhill soil.

This map unit is in capability subclass VIIe.

37—Cedarhill, high precipitation-Trailcreek-Coalbank complex, 20 to 50 percent slopes. This map unit is on mountainsides and fan terrace escarpments. The native vegetation is mainly shrubs and grasses. Elevation is about 4,800 to 6,000 feet. The average annual precipitation is about 16 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 80 days.

This unit is about 35 percent Cedarhill very cobbly silt loam, high precipitation, about 20 percent Trailcreek very fine sandy loam, and about 20 percent Coalbank very fine sandy loam. The Cedarhill soil is on convex side slopes and ridges, the Trailcreek soil is on slightly convex to slightly concave side slopes, and the Coalbank soil is on concave side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is Lonigan cobbly silt loam on slightly concave, south- and west-facing side slopes, about 5 percent is Ricrest gravelly silt loam on the lower part of side slopes below areas of the Cedarhill soil, and about 5 percent is Hondoho cobbly silt loam on ridges. The remaining 5 percent is small areas of very deep soils in drainageways, Rock outcrop consisting of tuff and volcanic breccia, Moonlight silt loam, and soils that have slopes of less than 20 percent or more than 50 percent.

The Cedarhill soil is very deep and well drained. It formed in alluvium and colluvium derived from various kinds of sedimentary and metasedimentary rock. Typically, the surface layer is brown, calcareous very cobbly silt loam 9 inches thick. The upper 19 inches of the underlying material is very pale brown and light yellowish brown, calcareous very cobbly silt loam, and the lower part to a depth of 60 inches or more is light yellowish brown, calcareous very cobbly loam.

Permeability of the Cedarhill soil is moderate. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Trailcreek soil is moderately deep to consolidated volcanic ash and is well drained. It formed in alluvium and residuum derived from consolidated volcanic ash. Typically, the surface layer is grayish brown very fine sandy loam 4 inches thick. The subsoil is grayish brown and light brownish gray very fine sandy loam 22 inches thick. Consolidated volcanic ash is at a depth of 26 inches. Depth to consolidated volcanic ash ranges from 20 to 40 inches.

Permeability of the Trailcreek soil is moderately rapid. Available water capacity is low. Effective rooting depth is 20 to 40 inches. Runoff is very rapid, and the hazard of water erosion is very high.

The Coalbank soil is very deep and well drained. It formed in alluvium and residuum derived from volcanic ash. Typically, the surface layer is brown very fine sandy loam 6 inches thick. The subsoil is brown very fine sandy loam 27 inches thick. The substratum to a depth of 60 inches or more is light gray very fine sandy loam.

Permeability of the Coalbank soil is moderately rapid. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Livestock watering facilities need to be developed or improved for summer and fall use of this unit. Use of mechanical equipment such as rangeland plows and drills is not practical on this unit because of the steepness of slope and the very cobbly surface of the Cedarhill soil.

This map unit is in capability subclass VIIe.

38—Coalbank very fine sandy loam, 4 to 12 percent slopes. This very deep, well drained soil is on foothills and terraces. It formed in alluvium and residuum derived from volcanic ash. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,800 to 6,000 feet. The average annual precipitation is about 15 inches, the average annual air temperature is about 45 degrees F, and the average frost-free period is about 85 days.

Typically, the surface layer is brown very fine sandy loam 6 inches thick. The subsoil is brown very fine sandy loam 27 inches thick. The substratum to a depth of 60 inches or more is light gray very fine sandy loam.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is Trailcreek very fine sandy loam on south- and west-facing side slopes and about 10 percent is Lonigan cobbly silt loam on convex side slopes and ridges. The remaining 5 percent is small areas of Rexburg silt loam, Watercanyon silt loam, Camelback very cobbly silt loam, Inkom silt loam, and soils that have slopes of less than 4 percent or more than 12 percent.

Permeability of this Coalbank soil is moderately rapid. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is high.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as rangeland.

This unit is suited to nonirrigated crops. It is used for the production of wheat and barley. The unit is limited mainly by the high hazard of water erosion and low natural fertility. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining at least 1,500 pounds of straw per acre on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. The unit is suited to the use of mechanical equipment such as rangeland plows and drills. The main limitation is the high hazard of water erosion. Nonmechanical treatment practices may be more suitable. Livestock watering facilities need to be developed or improved for summer and fall use of this unit. The unit is limited for livestock watering ponds and other water impoundments by the seepage potential.

This map unit is in capability subclass IIIe.

39—Coalbank-Trailcreek-Lonigan complex, 12 to 20 percent slopes. This map unit is on foothills. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,800 to 6,000 feet. The average annual precipitation is about 16 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 85 days.

This unit is about 30 percent Coalbank very fine sandy loam, about 25 percent Trailcreek very fine sandy loam, and about 20 percent Lonigan cobbly silt loam. The Coalbank soil is on concave side slopes, the Trailcreek soil is on slightly convex side slopes, and the Lonigan soil is on convex side slopes and ridges. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 5 percent is Cedarhill very cobbly silt loam, high precipitation, on south- and west-facing side slopes and ridges; about 5 percent is Bancroft silt loam on plane, north-facing side slopes; about 5 percent is Ririe silt loam on smooth broad ridges; and about 5 percent is Arbone gravelly silt loam on south- and west-facing side slopes near drainageways. The remaining 5 percent is small areas of soils that have a weakly cemented pan at a depth of 20 to 40 inches, volcanic breccia outcrops, and soils that have slopes of less than 12 percent or more than 20 percent.

The Coalbank soil is very deep and well drained. It formed in alluvium and residuum derived from volcanic ash. Typically, the surface layer is brown very fine sandy loam 6 inches thick. The subsoil is brown very fine sandy loam 27 inches thick. The substratum to a depth of 60 inches or more is light gray very fine sandy loam.

Permeability of the Coalbank soil is moderately rapid. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Trailcreek soil is moderately deep to consolidated volcanic ash and is well drained. It formed in alluvium and residuum derived from consolidated volcanic ash. Typically, the surface layer is grayish brown very fine sandy loam 4 inches thick. The subsoil is grayish brown and light brownish gray very fine sandy loam 22 inches thick. Consolidated volcanic ash is at a depth of 26 inches. Depth to consolidated volcanic ash ranges from 20 to 40 inches.

Permeability of the Trailcreek soil is moderately rapid. Available water capacity is low. Effective rooting depth is 20 to 40 inches. Runoff is very rapid, and the hazard of water erosion is very high.

The Lonigan soil is moderately deep to consolidated volcanic ash and is well drained. It formed in alluvium and residuum derived from consolidated volcanic ash. Typically, the surface layer is dark grayish brown and grayish brown cobbly silt loam 7 inches thick. The subsoil is brown, calcareous very cobbly silt loam 5 inches thick. The upper 7 inches of the substratum is pale brown, calcareous very cobbly loam, and the lower part to a depth of 27 inches is white, calcareous extremely cobbly loam. Consolidated volcanic ash is at a depth of 27 inches. Depth to consolidated volcanic ash ranges from 20 to 40 inches.

Permeability of the Lonigan soil is moderately rapid. Available water capacity is low. Effective rooting depth is 20 to 40 inches. Runoff is very rapid, and the hazard of water erosion is very high.

Most areas of this unit are used as rangeland. A few areas are used as nonirrigated cropland.

This unit is suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. Livestock watering facilities need to be developed or improved for summer and fall use of this unit. The unit is limited for livestock watering ponds and other water impoundments by the seepage potential. It is poorly suited to the use of mechanical equipment such as rangeland plows and drills. It is limited mainly by the very high hazard of water erosion and the cobbly surface of the Lonigan soil. Nonmechanical treatment practices may be more suitable.

This unit is poorly suited to nonirrigated crops. It is used for the production of wheat and barley. It is limited mainly by the very high hazard of water erosion, the cobbly surface of the Lonigan soil, and the low available water capacity of the Lonigan and Trailcreek soils. Maintaining at least 1,500 pounds of straw per acre on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Seeding to permanent cover may be needed to reduce erosion. The cobbly surface of the Lonigan soil may hinder the use of machinery.

This map unit is in capability subclass VIe.

40—Coalbank-Trailcreek-Lonigan complex, 20 to 50 percent slopes. This map unit is on mountainsides and foothills. The native vegetation is mainly shrubs and grasses. Elevation is about 4,800 to 6,000 feet. The average annual precipitation is about 16 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 85 days.

This unit is about 25 percent Coalbank very fine sandy loam, about 25 percent Trailcreek very fine sandy loam, and about 25 percent Lonigan cobbly silt loam. The Coalbank soil is on concave side slopes, the Trailcreek soil is on plane to slightly convex side slopes, and the Lonigan soil is on convex side slopes and ridges. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 15 percent is Cedarhill very cobbly silt loam, high precipitation, on limestone ridges and about 5 percent is Ricrest gravelly silt loam on slightly concave side slopes. The remaining 5 percent is small areas of Lanoak silt loam, Moonlight silt loam, soils that have slopes of less than 20 percent or more than 50 percent, and Rock outcrop consisting of tuff, volcanic breccia, and rhyolite.

The Coalbank soil is very deep and well drained. It formed in alluvium and residuum derived from volcanic ash. Typically, the surface layer is brown very fine sandy loam 6 inches thick. The subsoil is brown very fine sandy loam 27 inches thick. The substratum to a depth of 60 inches or more is light gray very fine sandy loam.

Permeability of the Coalbank soil is moderately rapid. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Trailcreek soil is moderately deep to consolidated volcanic ash and is well drained. It formed in alluvium and residuum derived from consolidated volcanic ash. Typically, the surface layer is grayish brown very fine sandy loam 4 inches thick. The subsoil is grayish brown and light brownish gray very fine sandy loam 22 inches thick. Consolidated volcanic ash is at a depth of 26 inches. Depth to consolidated volcanic ash ranges from 20 to 40 inches.

Permeability of the Trailcreek soil is moderately rapid. Available water capacity is low. Effective rooting depth is 20 to 40 inches. Runoff is very rapid, and the hazard of water erosion is very high.

The Lonigan soil is moderately deep to consolidated volcanic ash and is well drained. It formed in alluvium and residuum derived from consolidated volcanic ash. Typically, the surface layer is dark grayish brown and grayish brown cobbly silt loam 7 inches thick. The subsoil is brown, calcareous very cobbly silt loam 5 inches thick. The upper 7 inches of the substratum is pale brown, calcareous very cobbly loam, and the lower part to a depth of 27 inches is white, calcareous extremely cobbly loam. Consolidated volcanic ash is at a depth of 27 inches. Depth to consolidated volcanic ash ranges from 20 to 40 inches.

Permeability of the Lonigan soil is moderately rapid. Available water capacity is low. Effective rooting depth is 20 to 40 inches. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. This unit is limited for livestock watering ponds and other water impoundments by the seepage potential. Use of mechanical equipment such as rangeland plows and drills is not practical on the unit because of the steepness of slope.

This map unit is in capability subclass VIIe.

41—Downata-Bear Lake complex, drained, 0 to 1 percent slopes. This map unit is on flood plains and low terraces. Drainage of the unit has been altered by dredging and straightening of stream channels. The native vegetation is mainly sedges and grasses. Elevation is about 4,500 to 4,800 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 90 days.

This unit is about 45 percent Downata silt loam and about 30 percent Bear Lake silt loam. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is very poorly drained soils that are similar to the Downata and Bear Lake soils, about 5 percent is Tendoy muck in depressional areas, and about 5 percent is Inkom silt loam along edges of the bottom lands. The remaining 5 percent is small ponds and small areas of soils that are similar to the Downata and Bear Lake soils but have layers of sand and gravel or are moderately saline to very strongly saline. The saline soils are south of Swan Lake, along the southern boundary of the survey area.

The Downata soil is very deep and poorly drained. It formed in silty alluvium derived from mixed sources. Typically, the surface is covered with a mat of undecomposed grass and moss 2 inches thick. The surface layer is grayish brown, calcareous silt loam 6 inches thick. The subsoil is grayish brown, calcareous silt loam 8 inches thick. Below this is a buried surface layer of dark gray, calcareous silty clay loam 6 inches thick. The next layer is a buried subsoil of gray, calcareous silty clay loam 10 inches thick. The upper 10 inches of the substratum is light brownish gray, calcareous silty clay loam, and the lower part to a depth of 60 inches or more is light gray, calcareous silt loam.

Permeability of the Downata soil is moderately slow. Available water capacity is high. Effective rooting depth for plants, except those that are water tolerant, is limited by a seasonal high water table that is at a depth of 0 to 1.5 feet from January through June. Runoff is very slow, and the hazard of water erosion is slight. The soil is frequently flooded for brief periods from January through June.

The Bear Lake soil is very deep and poorly drained. It formed in silty alluvium derived from mixed sources. Typically, the surface layer is dark grayish brown, calcareous silt loam 12 inches thick. The subsoil is light gray, calcareous silty clay loam 12 inches thick. The upper 16 inches of the substratum is light gray, calcareous silty clay loam, and the lower part to a depth of 60 inches or more is light gray, calcareous silt loam.

Permeability of the Bear Lake soil is moderately slow. Available water capacity is high. Effective rooting depth for plants, except those that are water tolerant, is limited by a seasonal high water table that is at a depth of 0 to 1.5 feet from January through June. Runoff is very slow, and the hazard of water erosion is slight. The soil is frequently flooded for brief periods from January through June.

This unit is used for the production of meadow hay and pasture (fig. 4).

This unit is suited to hay and pasture. The potential natural plant community on the unit is mainly tufted hairgrass and Nebraska sedge and other sedges. The main limitation is wetness. Wetness limits the choice of

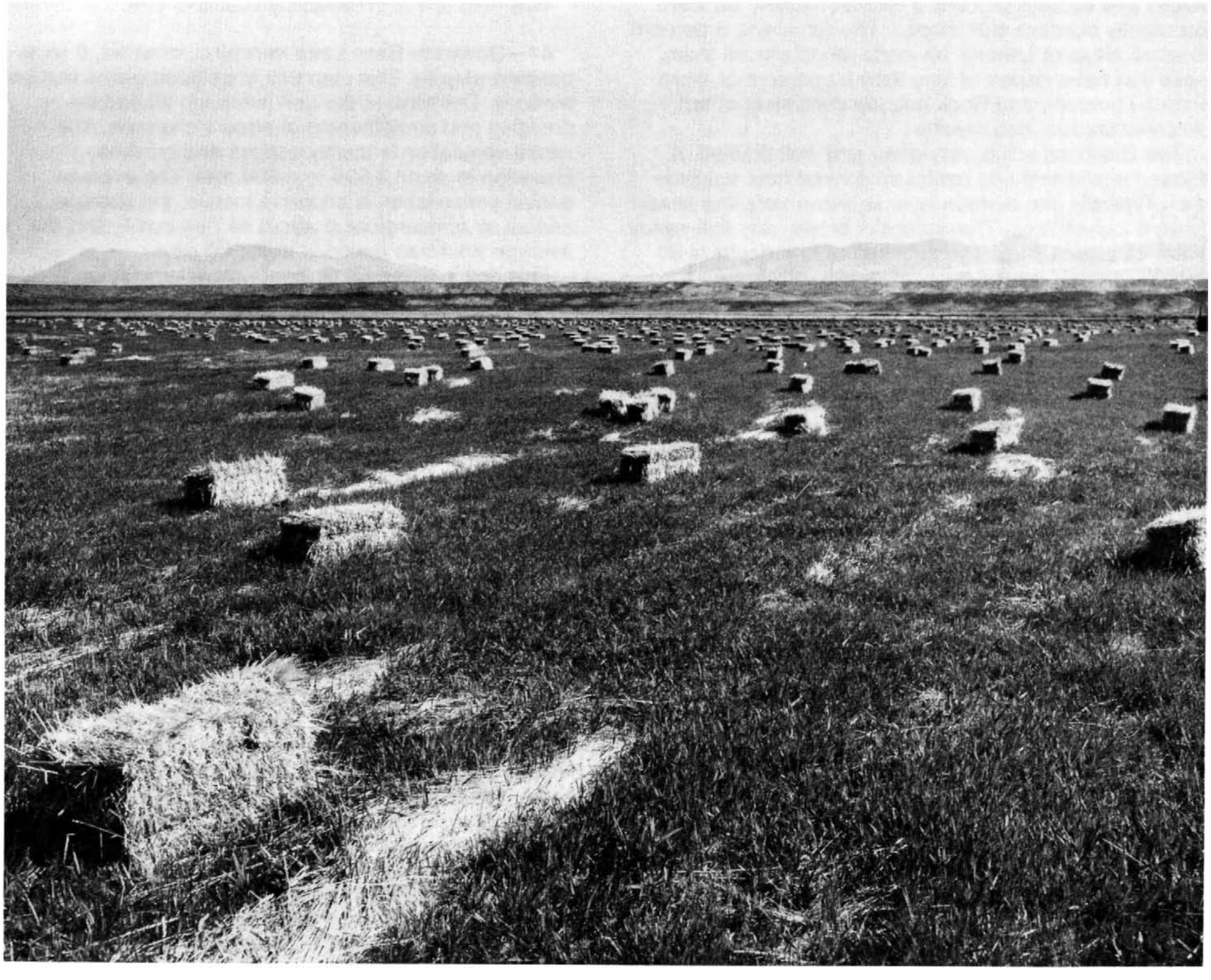

Figure 4.—Meadow hay in an area of Downata-Bear Lake complex, 0 to 1 percent slopes.

plants and the period of harvesting or grazing and increases the risk of winterkill. Plants that tolerate wetness should be seeded. Grazing and harvesting of hay should be delayed until the soil has drained sufficiently and is firm enough to withstand trampling by livestock and support the weight of harvesting equipment. This unit is capable of producing about 2 tons of grass hay per acre if not irrigated and about 2.5 tons if irrigated.

This map unit is in capability subclass Vw, irrigated and nonirrigated.

42—Downey-Arimo complex, 0 to 3 percent slopes. This map unit is on terraces. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,600 to 4,900 feet. The average annual precipitation is about 13 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 95 days.

This unit is about 45 percent Downey gravelly silt loam and about 40 percent Arimo silt loam. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is a soil that is similar to the Downey soil but has a stony silt loam surface layer and is on and near terrace breaks and about 5 percent is a soil that is similar to the Arimo soil but is more than 40 inches deep to extremely gravelly coarse sand and is in slightly concave areas. The remaining 5 percent is small areas of Ririe silt loam and soils that have slopes of more than 3 percent.

The Downey soil is very deep and well drained. It formed in silty alluvium overlying flood-deposited sand and gravel of mixed mineralogy. Typically, the surface layer is brown gravelly silt loam 12 inches thick. The upper 5 inches of the underlying material is very pale brown, calcareous gravelly silt loam, and the lower part to a depth of 60 inches or more is multicolored, calcareous extremely gravelly coarse sand. Depth to extremely gravelly coarse sand is 12 to 20 inches.

Permeability of the Downey soil is moderate to a depth of 17 inches and very rapid below this depth. Available water capacity is low. Effective rooting depth is 60 inches or more. In both irrigated and nonirrigated areas, runoff is slow and the hazard of water erosion is slight.

The Arimo soil is very deep and well drained. It formed in loess and silty alluvium overlying flood-deposited sand and gravel of mixed mineralogy. Typically, the surface layer is grayish brown silt loam 6 inches thick. The subsoil is brown silt loam 12 inches thick. The upper 15 inches of the substratum is white, calcareous silt loam, and the lower part to a depth of 60 inches or more is multicolored, calcareous extremely gravelly coarse sand. Depth to extremely gravelly coarse sand ranges from 20 to 40 inches.

Permeability of the Arimo soil is moderate to a depth of 33 inches and very rapid below this depth. Available water capacity is moderate. Effective rooting depth is 60 inches or more. In both irrigated and nonirrigated areas, runoff is slow, and the hazard of water erosion is slight.

Most areas of this unit are used as irrigated cropland and rangeland. A few areas are used as nonirrigated cropland and for homesite and urban development.

This unit is suited to irrigated crops. It is used mainly for the production of wheat, barley, and alfalfa hay. The unit is limited mainly by the droughtiness of the Downey soil. Because the Downey soil is droughty, applications of irrigation water should be light and frequent. Sprinkler irrigation is a suitable method of applying water. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion. Water should be applied in amounts sufficient to wet the root zone but in amounts small enough to minimize the leaching of plant nutrients. Maintaining crop residue on or near the surface reduces runoff and helps to maintain soil tilth and organic matter content. Tillage should be kept to a minimum.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly Wyoming big sagebrush, bluebunch wheatgrass, Thurber needlegrass, and arrowleaf balsamroot. This unit is well suited to the use of mechanical equipment such as rangeland plows and drills. Livestock watering facilities need to be developed or improved for summer and fall use of this unit. This unit is limited for livestock watering ponds and other water impoundments by the seepage potential.

This unit is poorly suited to nonirrigated crops. It is used for the production of wheat and barley. The unit is limited mainly by low precipitation and the droughtiness of the Downey soil. Because precipitation is not sufficient for annual cropping, a cropping system that includes small grain and summer fallow is most suitable. Maintaining at least 1,500 pounds of straw per acre on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

If this unit is used for homesite and urban development, the main limitations are the hazard of frost action in the silty overlying material and the hazards of cutbanks caving in and seepage in the underlying extremely gravelly coarse sand. Frost action potential is a limitation in maintaining roads, streets, driveways, and sidewalks. Cutbanks are not stable and are subject to slumping. If the density of housing is moderate to high, community sewage systems help to prevent contamination of ground water as a result of seepage from onsite sewage disposal systems.

This map unit is in capability subclasses IIIs, irrigated, and VIs, nonirrigated.

43—Downey-Arimo complex, 3 to 8 percent slopes. This map unit is on terraces. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,600 to 4,900 feet. The average annual precipitation is about 13 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 95 days.

This unit is about 55 percent Downey gravelly silt loam and about 30 percent Arimo silt loam. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is a soil that is similar to the Downey soil but has a stony silt loam surface layer and is on terrace breaks and about 5 percent is a soil that is similar to the Downey soil but is less than 10 inches deep to sand and gravel and is in slightly convex areas. The remaining 5 percent is small areas of soils that have slopes of less than 3 percent or more than 8 percent and Bear Lake silt loam.

The Downey soil is very deep and well drained. It formed in silty alluvium overlying flood-deposited sand and gravel of mixed mineralogy. Typically, the surface layer is brown gravelly silt loam 12 inches thick. The upper 5 inches of the underlying material is very pale brown, calcareous gravelly silt loam, and the lower part to a depth of 60 inches or more is multicolored, calcareous extremely gravelly coarse sand. Depth to extremely gravelly coarse sand is 12 to 20 inches.

Permeability of the Downey soil is moderate to a depth of 17 inches and very rapid below this depth. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is moderate. If this soil is irrigated, runoff is rapid and the hazard of water erosion is high.

The Arimo soil is very deep and well drained. It formed in loess and silty alluvium overlying flood-deposited sand and gravel of mixed mineralogy. Typically, the surface layer is grayish brown silt loam 6 inches thick. The subsoil is brown silt loam 12 inches thick. The upper 15 inches of the substratum is white, calcareous silt loam, and the lower part to a depth of 60 inches or more is multicolored, calcareous extremely gravelly coarse sand. Depth to extremely gravelly coarse sand ranges from 20 to 40 inches.

Permeability of the Arimo soil is moderate to a depth of 33 inches and very rapid below this depth. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is moderate. If this soil is irrigated, runoff is rapid and the hazard of water erosion is high.

Most areas of this unit are used as irrigated cropland and rangeland. A few areas are used as nonirrigated cropland and for homesite and urban development.

This unit is suited to irrigated crops. It is used mainly for the production of wheat, barley, and alfalfa hay. The unit is limited mainly by the droughtiness of the Downey soil and the high hazard of water erosion. Because the Downey soil is droughty, applications of irrigation water should be light and frequent. Sprinkler irrigation is a suitable method of applying water. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion. Irrigation water needs to be applied at a rate that insures optimum production without increasing deep percolation, runoff, and erosion. Crop residue left on or near the surface helps to conserve moisture, maintain tilth, and control erosion. Tillage should be kept to a minimum.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly Wyoming big sagebrush, bluebunch wheatgrass, Thurber needlegrass, and arrowleaf balsamroot. This unit is well suited to the use of mechanical equipment such as rangeland plows and drills. Livestock watering facilities need to be developed or improved for summer and fall use of this unit. The unit is limited for livestock watering ponds and other water impoundments by the seepage potential.

This unit is poorly suited to nonirrigated crops. It is used for the production of wheat and barley. The unit is limited mainly by low precipitation, the droughtiness of the Downey soil, and the hazard of water erosion. Because precipitation is not sufficient for annual cropping, a cropping system that includes small grain and summer fallow is most suitable. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

If this unit is used for homesite and urban development, the main limitations are the hazard of frost action in the silty overlying material, the hazard of cutbanks caving in and the seepage potential in the underlying extremely gravelly coarse sand, and slope. Frost action potential is a limitation in maintaining roads, streets, driveways, and sidewalks. If the density of housing is moderate to high, community sewage systems help to prevent contamination of ground water as a result of seepage from onsite sewage disposal systems. Cutbanks are not stable and are subject to slumping.

This map unit is in capability subclasses IIIe, irrigated, and VIe, nonirrigated.

44—Enochville-Enochville Variant complex, 0 to 1 percent slopes. This map unit is on stream terraces. The native vegetation is mainly sedges and grasses. Elevation is about 6,000 to 6,400 feet. The average annual precipitation is about 18 inches, the average annual air temperature is about 41 degrees F, and the average frost-free period is about 60 days.

This unit is about 40 percent Enochville silt loam and about 35 percent Enochville Variant gravelly silt loam. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 5 percent is Holmes very cobbly loam on terrace escarpments, about 10 percent is soils that have a water table at or near the surface, and about 5 percent is soils that are similar to the Enochville and Enochville Variant soils but are moderately well drained and are in convex areas and near the edges of the bottom lands. The remaining 5 percent is small areas of very poorly drained soils that have more than 35 percent clay in the subsoil and upper part of the substratum and soils that have slopes of more than 1 percent.

The Enochville soil is very deep and poorly drained. It formed in alluvium derived from mixed sources. Typically, the surface layer is very dark grayish brown silt loam 12 inches thick. The subsoil is dark grayish brown silty clay loam 8 inches thick. The upper 23 inches of the substratum is grayish brown silt loam, and the lower part to a depth of 60 inches or more is pale olive and pale yellow very cobbly sandy loam and extremely cobbly sandy loam.

Permeability of the Enochville soil is moderately slow. Available water capacity is high. Effective rooting depth for plants, except those that are water tolerant, is limited by a seasonal high water table that is at a depth of 1 to 2 feet from April through June. Runoff is slow, and the hazard of water erosion is slight. This soil is frequently flooded for brief periods from February through June.

The Enochville Variant soil is very deep and poorly drained. It formed in alluvium derived from mixed sources. Typically, the surface layer is dark grayish brown, calcareous gravelly silt loam 11 inches thick. Below this to a depth of 18 inches is a buried surface layer of dark grayish brown, calcareous gravelly silt loam. The next layer is a buried subsoil of dark grayish brown gravelly silt loam 6 inches thick. The upper 6 inches of the substratum is grayish brown very gravelly loam, and the lower part to a depth of 60 inches or more is light brownish gray and light gray, calcareous extremely gravelly loam.

Permeability of the Enochville Variant soil is moderate. Available water capacity is low. Effective rooting depth for plants, except those that are water tolerant, is limited by a seasonal high water table that is at a depth of 1 to 2 feet from April through June. Runoff is slow, and the hazard of water erosion is slight. This soil is frequently flooded for brief periods from February through June.

This unit is used as rangeland.

This unit is suited to use as rangeland. The potential natural plant community on the unit is mainly sedges, basin wildrye, and slender wheatgrass. The main limitations are the seasonal high water table and frequent flooding late in winter and in spring. Grazing should be delayed until the soil is firm and the more desirable forage plants have achieved sufficient growth to withstand grazing pressure. The main limitation for rangeland seeding on this unit is the hazard of frequent flooding.

This map unit is in capability subclass Vw.

45—Greys-Pavohroo-Sedgway association, 8 to 20 percent slopes. This map unit is on mountain foot slopes. Elevation is about 6,000 to 7,000 feet.

This unit is about 50 percent Greys silt loam, about 20 percent Pavohroo silt loam, and about 20 percent Sedgway gravelly silt loam. The Greys soil is on slightly concave to plane slopes, the Pavohroo soil is on slightly convex to plane slopes, and the Sedgway soil is on convex ridges and near drainageways.

Included areas make up about 10 percent of the total acreage of this unit. Of this, about 5 percent is Yago extremely stony silty clay loam in convex areas on ridges. The remaining 5 percent is small areas of very deep, poorly drained soils near springs, a very deep soil in drainageways, Hades gravelly silt loam, and soils that have slopes of less than 8 percent or more than 20 percent.

The Greys soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. The native vegetation is mainly trees and grasses. The average annual precipitation is about 20 inches, the average annual air temperature is about 40 degrees F, and the average frost-free period is about 60 days. Typically, an intermittent duff layer of leaves, twigs, and grasses about 3 inches thick is on the surface. The surface layer is dark grayish brown silt loam 8 inches thick. The upper 4 inches of the subsurface layer is light brownish gray silt loam, and the lower part, to a depth of 19 inches, is 60 percent light brownish gray silt loam and 40 percent brown silt loam. The subsoil to a depth of 60 inches or more is brown, light yellowish brown, and pale brown silt loam.

Permeability of the Greys soil is moderately slow. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Pavohroo soil is very deep and well drained. It formed in silty alluvium and colluvium derived from loess and various kinds of sedimentary and metasedimentary rock. The native vegetation is mainly trees and shrubs. The average annual precipitation is about 25 inches, the average annual air temperature is about 39 degrees F, and the average frost-free period is about 40 days. Typically, an intermittent duff layer of needles, leaves, and twigs about 3 inches thick is on the surface. The surface layer is dark grayish brown silt loam 26 inches thick. The subsoil to a depth of 60 inches or more is pale brown stony loam.

Permeability of the Pavohroo soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Sedgway soil is very deep and well drained. It formed in alluvium and colluvium derived dominantly from sedimentary and metasedimentary rock. The native vegetation is mainly trees and grasses. The average annual precipitation is about 27 inches, the average annual air temperature is about 38 degrees F, and the average frost-free period is about 40 days. Typically, an intermittent duff layer of needles, leaves, twigs, and grasses about 2 inches thick is on the surface. The upper 5 inches of the surface layer is very dark grayish brown gravelly silt loam, and the lower 7 inches is dark grayish brown very cobbly silt loam. The subsurface layer is pale brown very cobbly loam 9 inches thick. The upper 6 inches of the subsoil is 80 percent yellowish brown very cobbly clay loam and 20 percent pale brown very cobbly loam, and the lower part to a depth of 60 inches or more is yellowish brown very cobbly clay loam.

Permeability of the Sedgway soil is moderately slow. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as woodland and for grazing.

The potential natural plant community on the Greys soil is mainly an overstory of quaking aspen and an understory dominated by pine reedgrass. The potential natural plant community on the Pavohroo soil is mainly an overstory of Douglas-fir and an understory dominated by mountain snowberry and pine reedgrass. The potential natural plant community on the Sedgway soil is mainly an overstory of Douglas-fir and an understory dominated by pine reedgrass.

The Greys soil is suited to the production of quaking aspen. On the basis of an 80-year site curve, the average site index for quaking aspen is 65. Yield tables indicate that the maximum average annual growth is 36 cubic feet per acre of quaking aspen at 80 years of age. Most of the aspen harvested is used as firewood.

The Pavohroo and Sedgway soils are well suited to the production of Douglas-fir. On the basis of a 50-year site curve, the average site index for Douglas-fir on these soils is 65. Yield tables indicate that the maximum average annual growth is 85 cubic feet per acre of Douglas-fir at 40 years of age. The main concerns in producing and harvesting timber are plant competition, the hazard of water erosion, and seedling mortality. If the overstory canopy is removed, the soil temperature increases. This may hinder the regeneration of timber. Competition from shrubs and grasses may also hinder regeneration. If the site is not adequately prepared, competition from undesirable plants can prevent or prolong natural or artificial reestablishment of trees. Minimizing the risk of erosion is essential in harvesting timber. Excessive erosion is avoided by carefully planning the construction and maintenance of logging roads, skid trails, and landings. Cuts and fills should be seeded, and water bars and culverts should be installed.

The Greys soil is well suited to the production of understory plants suitable for grazing. It can produce additional forage for livestock and wildlife for 10 to 20 years after the canopy is opened by logging, fire, or other disturbance. During this period annual production of understory ranges from 3,000 pounds of air-dry vegetation per acre to less than 300 pounds per acre as the canopy closes. In spring, cold soil temperatures limit early plant growth. Grazing should be delayed until the plants have achieved sufficient growth.

The Pavohroo soil is well suited to the production of understory plants suitable for grazing. It can produce additional forage for livestock and wildlife for 15 to 30 years after the canopy is opened by logging, fire, or other disturbance. During this period annual production of understory ranges from 3,000 pounds of air-dry vegetation per acre to less than 200 pounds per acre as the canopy closes. In spring, cold soil temperatures limit early plant growth. Grazing should be delayed until the plants have achieved sufficient growth.

The Sedgway soil is well suited to the production of understory plants suitable for grazing. It can produce additional forage for livestock and wildlife for 15 to 30 years after the canopy is opened by logging, fire, or other disturbance. During this period annual production of understory ranges from 3,000 pounds of air-dry vegetation per acre to less than 300 pounds per acre as the canopy closes. In spring, cold soil temperatures limit early plant growth. Grazing should be delayed until the plants have achieved sufficient growth.

The Greys soil is in capability subclass IVe, and the Pavohroo and Sedgway soils are in capability subclass VIe.

46—Hades gravelly silt loam, 6 to 15 percent slopes. This very deep, well drained soil is on fan terraces and mountain foot slopes. It formed in mixed alluvium derived dominantly from loess and quartzite. The native vegetation is mainly shrubs and grasses. Elevation is about 6,000 to 7,000 feet. The average annual precipitation is about 18 inches, the average annual air temperature is about 40 degrees F, and the average frost-free period is about 70 days.

Typically, the surface layer is dark grayish brown and dark brown gravelly silt loam 7 inches thick. The upper 7 inches of the subsoil is dark brown gravelly silt loam, and the lower part to a depth of 60 inches or more is brown, yellowish brown, and light yellowish brown gravelly silty clay loam.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Camelback gravelly silt loam on convex side slopes and about 5 percent is Holmes very cobbly loam on terrace breaks and along drainageways. The remaining 5 percent is small areas of Valmar very cobbly silt loam and Greys silt loam.

Permeability of this Hades soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

This unit is used as rangeland and nonirrigated cropland.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush, bluebunch wheatgrass, and slender wheatgrass. This unit is suited to the use of mechanical equipment such as rangeland plows and drills.

This unit is suited to nonirrigated crops. It is limited mainly by the hazard of water erosion and the frost-free period. Practices that can be used to control erosion include seeding early in fall, stubble mulch tillage, and construction of terraces, diversions, and grassed waterways. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. In some years the frost-free period is shorter than normal, which significantly reduces yields of crops on this unit.

This map unit is in capability subclass IVe.

47—Hades-Camelback-Hondoho complex, 30 to 60 percent slopes. This map unit is on mountainsides and on terrace escarpments along drainageways. The native vegetation is mainly shrubs and grasses. Elevation is about 5,000 to 6,700 feet. The average annual precipitation is about 18 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 75 days.

This unit is about 35 percent Hades gravelly silt loam, about 20 percent Camelback gravelly silt loam, and about 20 percent Hondoho cobbly silt loam. The Hades soil is on north- and east-facing side slopes and in concave positions, the Camelback soil is on convex, north- and east-facing side slopes and on slightly convex, south- and west-facing side slopes, and the Hondoho soil is on south- and west-facing side slopes and in convex areas. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 5 percent is Cedarhill very cobbly silt loam, about 5 percent is Broadhead silt loam, about 5 percent is Manila silt loam, and about 5 percent is Yago very cobbly silty clay loam. The remaining 5 percent is small areas of Joes silt loam, Trailcreek very fine sandy loam, volcanic ash outcrops, Inkom silt loam, soils that are similar to the Hades soil but are along drainageways, and soils that have slopes of less than 30 percent or more than 50 percent.

The Hades soil is very deep and well drained. It formed in mixed alluvium derived from loess and quartzite. Typically, the surface layer is dark grayish brown and dark brown gravelly silt loam 7 inches thick. The upper 7 inches of the subsoil is dark brown gravelly silt loam, and the lower part to a depth of 60 inches or more is brown, yellowish brown, and light yellowish brown gravelly silty clay loam.

Permeability of the Hades soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Camelback soil is very deep and well drained. It formed in alluvium and colluvium derived dominantly from quartzite. Typically, the surface layer is dark brown gravelly silt loam 21 inches thick. The upper 9 inches of the subsoil is dark brown extremely cobbly silt loam, and the lower part to a depth of 60 inches or more is yellowish brown extremely cobbly silt loam.

Permeability of the Camelback soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Hondoho soil is very deep and well drained. It formed in mixed alluvium. Typically, the surface layer is grayish brown cobbly silt loam 8 inches thick. The subsoil is brown, calcareous cobbly silt loam 7 inches thick. The substratum to a depth of 60 inches or more is light yellowish brown and pale brown, calcareous very cobbly sandy clay loam.

Permeability of the Hondoho soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical on the unit because of the steepness of slope, the very cobbly surface of the Camelback soil, and the cobbly surface of the Hondoho soil.

This map unit is in capability subclass VIIe.

48—Hades-Holmes complex, 1 to 10 percent slopes. This map unit is on stream terraces. The native vegetation is mainly shrubs and grasses. Elevation is about 6,000 to 6,200 feet. The average annual precipitation is about 18 inches, the average annual air temperature is about 40 degrees F, and the average frost-free period is about 70 days.

This unit is about 55 percent Hades gravelly silt loam and about 25 percent Holmes very cobbly loam. The Hades soil is in the nearly level areas, and the Holmes soil is on the more steeply sloping terrace breaks. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 10 percent is a soil that is similar to the Holmes soil but has slopes of as much as 60 percent and about 5 percent is Holmes gravelly loam in nearly level areas. The remaining 5 percent is small areas of Enochville silt loam and Enochville Variant gravelly silt loam in drainageways.

The Hades soil is very deep and well drained. It formed in mixed alluvium derived dominantly from quartzite. Slope is 1 to 2 percent. Typically, the surface layer is dark grayish brown and dark brown gravelly silt loam 7 inches thick. The upper 7 inches of the subsoil is dark brown gravelly silt loam, and the lower part to a depth of 60 inches or more is brown, yellowish brown, and light yellowish brown gravelly silty clay loam.

Permeability of the Hades soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

The Holmes soil is very deep and well drained. It formed in mixed alluvium derived dominantly from quartzite. Slope is 6 to 10 percent. Typically, the surface layer is dark grayish brown and dark brown very cobbly loam 8 inches thick. The upper 8 inches of the subsoil is dark yellowish brown very cobbly loam, and the lower 12 inches is yellowish brown very cobbly clay loam. The substratum to a depth of 60 inches or more is multicolored extremely gravelly loamy coarse sand.

Permeability of the Holmes soil is moderate to a depth of 28 inches and rapid below this depth. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is moderate.

This unit is used as rangeland.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. Use of mechanical equipment such as rangeland plows and drills is not practical on the Holmes soil because the surface is very cobbly. The suitability of the Hades soil for rangeland seeding is good.

This map unit is in capability subclass IVc.

49—Hades-Lanoak complex, 4 to 12 percent slopes. This map unit is on foothills and terraces. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,700 to 5,500 feet. The average annual precipitation is about 16 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 80 days.

This unit is about 45 percent Hades gravelly silt loam and about 35 percent Lanoak silt loam. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is Oxford silty clay loam on convex side slopes, about 5 percent is Hondoho cobbly silt loam on convex side slopes and along terrace breaks, and about 5 percent is Camelback very cobbly silt loam on convex side slopes and ridges. The remaining 5 percent is small areas of Bancroft silt loam and Hades and Lanoak soils that have slopes of less than 4 percent or more than 12 percent.

The Hades soil is very deep and well drained. It formed in mixed alluvium derived from loess and quartzite. Typically, the surface layer is dark grayish brown and dark brown gravelly silt loam 7 inches thick. The upper 7 inches of the subsoil is dark brown gravelly silt loam, and the lower part to a depth of 60 inches or more is brown, yellowish brown, and light yellowish brown gravelly silty clay loam.

Permeability of the Hades soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

The Lanoak soil is very deep and well drained. It formed in silty alluvium derived from loess. Typically, the surface layer is dark grayish brown silt loam 22 inches thick. The subsoil is grayish brown and pale brown silt loam 22 inches thick. The substratum to a depth of 60 inches or more is light gray, calcareous silt loam.

Permeability of the Lanoak soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as rangeland.

This unit is well suited to nonirrigated crops. It is used for the production of wheat, barley, and alfalfa hay. The unit is limited mainly by the high hazard of water erosion. Terraces reduce runoff and the risk of erosion and help to conserve moisture. Erosion can be reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining at least 1,500 pounds of straw per acre on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly bluebunch wheatgrass and mountain big sagebrush. This unit is suited to the use of mechanical equipment such as rangeland plows and drills.

This map unit is in capability subclass IIIe.

50—Hades-Lanoak-Camelback complex, 20 to 50 percent slopes. This map unit is on mountainsides and fan terraces. The native vegetation is mainly shrubs and grasses. Elevation is about 5,300 to 6,600 feet. The average annual precipitation is about 17 inches, the average annual air temperature is about 41 degrees F, and the average frost-free period is about 75 days.

This unit is about 25 percent Hades gravelly silt loam, about 25 percent Lanoak silt loam, and about 25 percent Camelback gravelly silt loam. The Hades soil is on north- and east-facing, concave side slopes, the Lanoak soil is on the lower part of side slopes and in concave pockets, and the Camelback soil is on north- and east-facing, convex side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 5 percent is Rock outcrop on the upper part of side slopes and along ridgetops; about 5 percent is soils that are similar to this Hades soil but are along drainageways; about 5 percent is Cedarhill very cobbly silt loam, high precipitation, on south- and west-facing, convex side slopes; and about 5 percent is Greys silt loam on the lower part of concave, north- and east-facing side slopes. The remaining 5 percent is small areas of Valmar very cobbly silt loam and soils that have slopes of less than 20 percent or more than 50 percent.

The Hades soil is very deep and well drained. It formed in mixed alluvium derived from loess and quartzite. Typically, the surface layer is dark grayish brown and dark brown gravelly silt loam 7 inches thick. The upper 7 inches of the subsoil is dark brown gravelly silt loam, and the lower part to a depth of 60 inches or more is brown, yellowish brown, and light yellowish brown gravelly silty clay loam.

Permeability of the Hades soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Lanoak soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. Typically, the surface layer is dark grayish brown silt loam 22 inches thick. The subsoil is grayish brown and pale brown silt loam 22 inches thick. The substratum to a depth of 60 inches or more is light gray, calcareous silt loam.

Permeability of the Lanoak soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Camelback soil is deep and well drained. It formed in alluvium, colluvium, and residuum derived dominantly from quartzite. Typically, the surface layer is dark brown gravelly silt loam 21 inches thick. The subsoil is dark brown and yellowish brown extremely cobbly silt loam 21 inches thick. Quartzite is at a depth of 42 inches. Depth to bedrock ranges from 40 to 60 inches.

Permeability of the Camelback soil is moderate. Available water capacity is low. Effective rooting depth is 40 to 60 inches. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is suited to use as rangeland. The potential natural plant community on the unit is mainly bluebunch wheatgrass and mountain big sagebrush. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical on the unit because of the steepness of slope and the very high hazard of water erosion.

This map unit is in capability subclass VIIe.

51—Harkness-Sedgway-Mikesell complex, 20 to 50 percent slopes. This map unit is on mountainsides. The native vegetation is mainly trees with an understory dominated by grasses. Elevation is about 6,000 to 8,000 feet. The average annual precipitation is about 27 inches, the average annual air temperature is about 38 degrees F, and the average frost-free period is less than 50 days.

This unit is about 35 percent Harkness silt loam, about 25 percent Sedgway gravelly silt loam, and about 20 percent Mikesell silt loam. The Harkness and Mikesell soils are generally on slightly concave to slightly convex north- and east-facing side slopes at the lower elevations, but they can have any aspect at the higher elevations. The Sedgway soil generally is on convex side slopes that dominantly face south and west.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is Dateman cobbly silt loam in convex areas and about 5 percent is Toponce silt loam on concave, south- and west-facing side slopes. The remaining 10 percent is small areas of Yago extremely stony silty clay loam, Valmar very cobbly silt loam, Ireland extremely stony silt loam, Hades gravelly silt loam, Rock outcrop, very deep soils that are poorly drained and somewhat poorly drained, and soils that have slopes of less than 20 percent or more than 50 percent.

The Harkness soil is very deep and well drained. It formed in mixed alluvium derived dominantly from sandstone and quartzite. Typically, an intermittent duff layer of needles, leaves, twigs, and grasses about 2 inches thick is on the surface. The surface layer is dark grayish brown and brown silt loam 8 inches thick. The subsurface layer is pale brown very cobbly loam 6 inches thick. The subsoil to a depth of 60 inches or more is light yellowish brown clay loam and silty clay loam.

Permeability of the Harkness soil is slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Sedgway soil is very deep and well drained. It formed in mixed alluvium and colluvium derived dominantly from sedimentary and metasedimentary rock. Typically, an intermittent duff layer of needles, leaves, twigs, and grasses about 2 inches thick is on the surface. The upper 5 inches of the surface layer is very dark grayish brown gravelly silt loam, and the lower 7 inches is dark grayish brown very cobbly silt loam. The subsurface layer is pale brown very cobbly loam 9 inches thick. The upper 6 inches of the subsoil is 80 percent yellowish brown very cobbly clay loam and 20 percent pale brown very cobbly loam, and the lower part to a depth of 60 inches or more is yellowish brown very cobbly clay loam.

Permeability of the Sedgway soil is moderately slow. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Mikesell soil is very deep and well drained. It formed in alluvium and colluvium derived dominantly from sandstone and quartzite. Typically, an intermittent duff layer of needles, twigs, and branches about 1.5 inches thick is on the surface. The surface layer is pinkish gray, pale brown, and very pale brown silt loam 11 inches thick. The upper 6 inches of the subsoil is 75 percent light yellowish brown gravelly silty clay and 25 percent very pale brown silt loam. The next 14 inches of the subsoil is pale brown and light yellowish brown gravelly silty clay, and the lower part to a depth of 60 inches or more is light yellowish brown very cobbly silty clay.

Permeability of the Mikesell soil is slow. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used for timber production and grazing.

The potential natural plant community on this unit is mainly an overstory of subalpine fir on the Harkness and Mikesell soils and Douglas-fir on the Sedgway soil and an understory dominated by pine reedgrass on all three soils.

Subalpine fir, lodgepole pine, and Douglas-fir are the main woodland species on the Harkness and Mikesell soils (fig. 5). Douglas-fir is the main woodland species on the Sedgway soil. On the basis of a 100-year site curve, the average site index for lodgepole pine is 80 on the Harkness soil and 90 on the Mikesell soil. On the basis of a 50-year site curve, the average site index for Douglas-fir is 70 on the Harkness soil, 65 on the Sedgway soil, and 75 on the Mikesell soil. Yield tables indicate that the maximum average annual growth of lodgepole pine at 100 years of age is 69 cubic feet per acre on the Harkness soil and 79 cubic feet per acre on the Mikesell soil. Yield tables indicate that the maximum average annual growth of Douglas-fir at 40 years of age is 96 cubic feet per acre on the Harkness soil, 85 cubic feet per acre on the Sedgway soil, and 104 cubic feet per acre on the Mikesell soil.

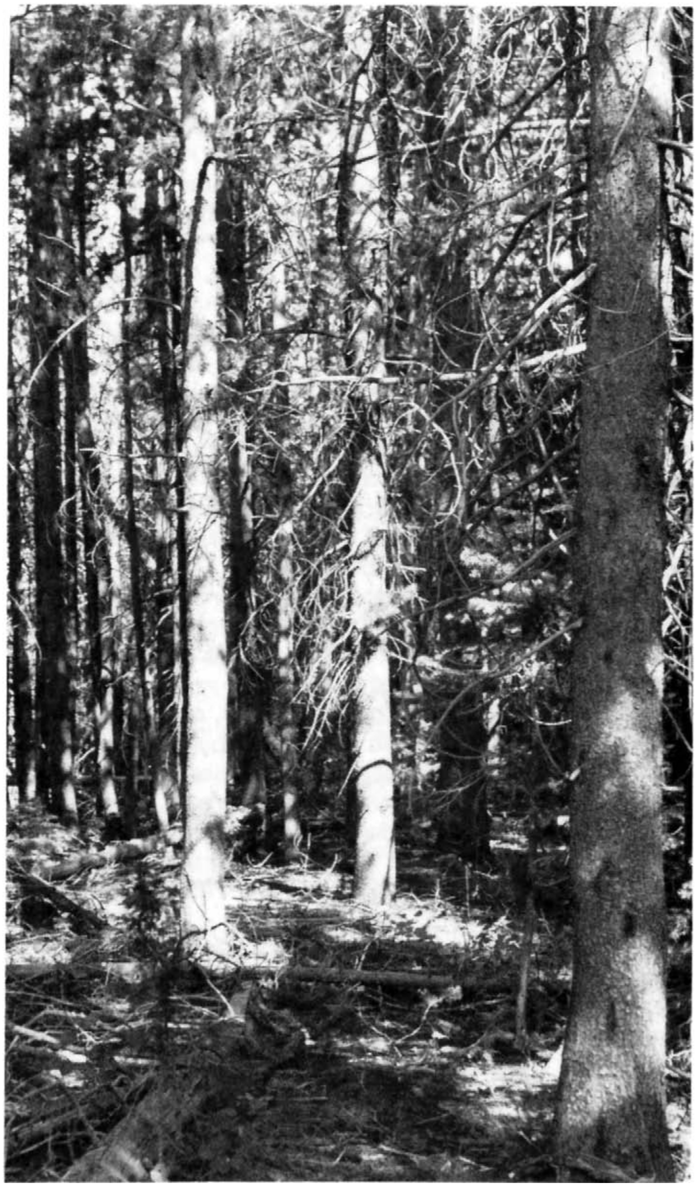

Figure 5.—Stand of lodgepole pine on Harkness silt loam in an area of Harkness-Sedgway-Mikesell complex, 20 to 50 percent slopes.

The main concerns in producing and harvesting timber are the hazard of water erosion, slope, and the hazard of plant competition. Minimizing the risk of erosion is essential in harvesting timber. Excessive erosion is avoided by carefully planning the construction and maintenance of logging roads, skid trails, and landings. Cuts and fills should be seeded, and water bars and culverts should be installed. The steepness of slope limits the kinds of equipment that can be used for harvesting timber. If the site is not adequately prepared, competition from undesirable plants can prevent or prolong natural or artificial reestablishment of trees.

This unit is suited to the production of understory plants suitable for grazing. It can produce additional forage for livestock and wildlife for 30 to 60 years after the canopy is opened by logging, fire, or other disturbance. During this period annual production of understory ranges from 3,000 pounds of air-dry vegetation per acre to less than 300 pounds per acre as the canopy closes. In spring, cold soil temperatures limit early plant growth. Grazing should be delayed until the plants have achieved sufficient growth. Use of forage by livestock in some areas of this unit is limited because of the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas.

Livestock and wildlife concentrate in the included areas of very deep, poorly drained and somewhat poorly drained soils in this unit. These areas provide access to water, and they produce the more palatable vegetation when not overused. If economical, these areas should be managed using a deferred grazing system. It is likely that many of these areas will be considered sacrifice areas when developing an overall grazing plan.

This map unit is in capability subclass VIIe, nonirrigated.

52—Holmes gravelly loam, 1 to 4 percent slopes. This very deep, well drained soil is on stream terraces. It formed in mixed alluvium derived dominantly from sedimentary and metasedimentary rock. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 5,000 to 5,400 feet. The average annual precipitation is about 16 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 85 days.

Typically, the surface layer is dark grayish brown and dark brown gravelly loam 8 inches thick. The upper 8 inches of the subsoil is dark yellowish brown very gravelly loam, and the lower 12 inches is yellowish brown very gravelly loam. The substratum to a depth of 60 inches or more is multicolored extremely gravelly loamy coarse sand.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is Hades gravelly silt loam in slightly concave areas, about 5 percent is Arbone gravelly silt loam in slightly convex areas, and about 5 percent is Hondoho gravelly silt loam in convex areas and on terrace breaks. The remaining 5 percent is small areas of a soil that is similar to this Holmes soil but has sand and gravel at a depth of 10 to 20 inches and soils that have slopes of less than 1 percent or more than 4 percent.

Permeability of this Holmes soil is moderate to a depth of 28 inches and rapid below this depth. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as irrigated cropland and rangeland.

This unit is suited to nonirrigated crops. It is limited mainly by the low available water capacity. Maintaining at least 1,500 pounds of straw per acre on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Also, waterways should be shaped and seeded to perennial grass.

This unit is suited to irrigated crops. It is limited mainly by the low available water capacity. Sprinkler irrigation is a suitable method of applying water. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion. Because the soil in this unit is droughty, applications of irrigation water should be light and frequent. To avoid overirrigating and leaching of plant nutrients, applications of irrigation water should be adjusted to the available water capacity, the water intake rate, and the crop needs.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. The suitability of this unit for rangeland seeding is good.

This map unit is in capability subclass IVs, irrigated and nonirrigated.

53—Hondoho-Arbone complex, 4 to 12 percent slopes. This map unit is on mountain foot slopes and fan terraces. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,500 to 5,500 feet. The average annual precipitation is about 13 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

This unit is about 45 percent Hondoho gravelly silt loam and about 40 percent Arbone gravelly silt loam. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is soils that are similar to the Hondoho soil but are subject to flash flooding and about 5 percent is soils that are similar to the Hondoho and Arbone soils but have slopes of more than 12 percent. The remaining 5 percent is small areas of Ririe silt loam, volcanic ash outcrops, and Trailcreek very fine sandy loam.

The Hondoho soil is very deep and well drained. It formed in alluvium derived from mixed sources. Typically, the surface layer is grayish brown gravelly silt loam 8 inches thick. The subsoil is brown, calcareous gravelly silt loam 7 inches thick. The substratum to a depth of 60 inches or more is light yellowish brown and pale brown, calcareous very gravelly silt loam.

Permeability of the Hondoho soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

The Arbone soil is very deep and well drained. It formed in alluvium derived from mixed sources. Typically, the surface layer is grayish brown gravelly silt loam 9 inches thick. The subsoil is brown and pale brown, calcareous gravelly silt loam 9 inches thick. The substratum to a depth of 60 inches or more is very pale brown, calcareous gravelly silt loam.

Permeability of the Arbone soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

Most areas of this unit are used as rangeland. A few areas are used as nonirrigated cropland.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. This unit is suited to the use of mechanical equipment such as rangeland plows and drills. The main limitation is the high hazard of water erosion. Nonmechanical treatment practices may be more suitable.

This unit is suited to nonirrigated crops. It is used for the production of wheat and barley. The unit is limited mainly by low precipitation and the high hazard of water erosion. Because precipitation is not sufficient for annual cropping, a cropping system that includes small grain and summer fallow is most suitable. Terraces reduce runoff and the risk of erosion and help to conserve moisture. Special designs for terraces are needed because of the shallow depth to moderately alkaline and strongly alkaline soil material. Bringing this material to the surface reduces the production of crops. Erosion can be reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining at least 1,500 pounds of straw per acre on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

This map unit is in capability subclass IIIe.

54—Hondoho-Arbone-Ririe complex, 20 to 50 percent slopes. This map unit is on terrace breaks along major drainageways. The native vegetation is mainly shrubs and grasses. Elevation is about 4,600 to 6,000 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

This unit is about 45 percent Hondoho cobbly silt loam, about 20 percent Arbone gravelly silt loam, and about 15 percent Ririe silt loam. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is Lanoak silt loam on north-facing side slopes, about 5 percent is soils that have slopes of less than 20 percent, and about 5 percent is Camelback extremely stony silt loam. The remaining 5 percent is small areas of Cedarhill very cobbly silt loam, Watercanyon silt loam, volcanic ash outcrops, and Trailcreek very fine sandy loam.

The Hondoho soil is very deep and well drained. It formed in alluvium derived from mixed sources. Slope is 20 to 50 percent. Typically, the surface layer is grayish brown cobbly silt loam 8 inches thick. The subsoil is brown, calcareous cobbly silt loam 7 inches thick. The substratum to a depth of 60 inches or more is light yellowish brown and pale brown, calcareous very cobbly loam.

Permeability of the Hondoho soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Arbone soil is very deep and well drained. It formed in alluvium derived from mixed sources. Slope is 20 to 30 percent. Typically, the surface layer is grayish brown gravelly silt loam 9 inches thick. The subsoil is brown and pale brown, calcareous gravelly silt loam 9 inches thick. The substratum to a depth of 60 inches or more is very pale brown, calcareous gravelly silt loam.

Permeability of the Arbone soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Ririe soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. Slope is 20 to 50 percent. Typically, the surface layer is brown silt loam 12 inches thick. The underlying material to a depth of 60 inches or more is pale brown and very pale brown, calcareous silt loam.

Permeability of the Ririe soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical on the unit because of the cobbly surface of the Hondoho soil and the steepness of slope.

This map unit is in capability subclass VIIe.

55—Hondoho-Hades complex, 4 to 12 percent slopes. This map unit is on foothills and terraces. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,800 to 5,500 feet. The average annual precipitation is about 16 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 80 days.

This unit is about 50 percent Hondoho cobbly silt loam and about 30 percent Hades gravelly silt loam. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is Cedarhill very cobbly silt loam, high precipitation, on convex, south- and west-facing side slopes and near ridgetops; about 5 percent is Oxford silty clay loam on convex side slopes; and about 5 percent is Camelback very cobbly silt loam on convex ridges and side slopes. The remaining 5 percent is small areas of Bancroft silt loam and soils that have slopes of less than 4 percent or more than 12 percent.

The Hondoho soil is very deep and well drained. It formed in mixed alluvium. Typically, the surface layer is grayish brown cobbly silt loam 8 inches thick. The subsoil is brown, calcareous cobbly silt loam 7 inches thick. The substratum to a depth of 60 inches or more is light yellowish brown and pale brown, calcareous very cobbly sandy clay loam.

Permeability of the Hondoho soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

The Hades soil is very deep and well drained. It formed in mixed alluvium derived from loess and quartzite. Typically, the surface layer is dark grayish brown and dark brown gravelly silt loam 7 inches thick. The upper 7 inches of the subsoil is dark brown gravelly silt loam, and the lower part to a depth of 60 inches or more is brown, yellowish brown, and light yellowish brown gravelly silty clay loam.

Permeability of the Hades soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as rangeland.

This unit is suited to nonirrigated crops. It is used for the production of wheat and barley. The unit is limited mainly by the cobbly surface of the Hondoho soil and the high hazard of water erosion. Terraces reduce runoff and the risk of erosion and help to conserve moisture. Erosion can be reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. The cobbly surface of the Hondoho soil and the very cobbly surface of the included Cedarhill and Camelback soils may hinder the use of machinery.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. This unit is not well suited to the use of mechanical equipment such as rangeland plows and drills. Nonmechanical treatment practices may be more suitable.

This map unit is in capability subclass IVe.

56—Hondoho-Lanoak-Camelback complex, 20 to 50 percent slopes. This map unit is on side slopes along major drainageways that deeply dissect fan terraces. The native vegetation is mainly shrubs and grasses. Elevation is about 5,000 to 6,500 feet. The average annual precipitation is about 16 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 85 days.

This unit is about 45 percent Hondoho cobbly silt loam, about 20 percent Lanoak silt loam, and about 20 percent Camelback gravelly silt loam. The Hondoho soil is on south- and west-facing side slopes, the Lanoak soil is on concave, north- and east-facing side slopes, and the Camelback soil is on convex, north- and east-facing side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Ririe silt loam on the lower part of south- and west-facing side slopes and about 5 percent is Moonlight silt loam in concave areas of north- and east-facing side slopes. The remaining 5 percent is small areas of Rock outcrop; Valmar very cobbly silt loam, low precipitation; Camelback very cobbly silt loam; soils that have slopes of less than 20 percent or more than 50 percent; and very deep soils that are along drainageways.

The Hondoho soil is very deep and well drained. It formed in mixed alluvium. Typically, the surface layer is grayish brown cobbly silt loam 8 inches thick. The subsoil is brown, calcareous cobbly silt loam 7 inches thick. The substratum to a depth of 60 inches or more is light yellowish brown and pale brown, calcareous very cobbly loam.

Permeability of the Hondoho soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Lanoak soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. Typically, the surface layer is dark grayish brown silt loam 22 inches thick. The subsoil is grayish brown and pale brown silt loam 22 inches thick. The substratum to a depth of 60 inches or more is light gray, calcareous silt loam.

Permeability of the Lanoak soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Camelback soil is very deep and well drained. It formed in alluvium and colluvium derived dominantly from sedimentary and metasedimentary rock. Typically, the surface layer is dark brown gravelly silt loam 21 inches thick. The upper 9 inches of the subsoil is dark brown extremely cobbly silt loam, and the lower part to a depth of 60 inches or more is yellowish brown extremely cobbly silt loam.

Permeability of the Camelback soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is suited to use as rangeland. The potential natural plant community on the unit is mainly bluebunch wheatgrass and mountain big sagebrush. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical on the unit because of the steepness of slope and the very high hazard of water erosion.

This map unit is in capability subclass VIIe.

57—Inkom silt loam, 0 to 1 percent slopes. This very deep, poorly drained soil is on stream terraces and flood plains. It formed in silty alluvium derived from mixed sources. The vegetation in areas not cultivated is mainly grasses and sedges. Elevation is about 4,500 to 5,400 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 90 days.

Typically, the surface layer is grayish brown, calcareous silt loam 7 inches thick. The subsoil to a depth of 60 inches or more is gray, grayish brown, and light gray, calcareous silt loam.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Inkom silt loam, drained, in the slightly higher areas that have better drainage and about 5 percent is a soil that is similar to this Inkom soil but is loam and sandy loam. The remaining 5 percent is small areas of Hondoho cobbly silt loam, Bear Lake silt loam, and soils that are similar to this Inkom soil but are not calcareous.

Permeability of this Inkom soil is moderate. Available water capacity is high. Effective rooting depth for plants, except those that are water tolerant, is limited by a seasonal high water table that is at a depth of 0 to 2 feet from February through June. Runoff is slow, and the hazard of water erosion is slight. This soil is subject to frequent flooding for brief periods from January through June.

Most areas of this unit are used as nonirrigated cropland. A few areas are used for pasture.

This unit is poorly suited to nonirrigated crops. It is used for the production of wheat and barley. The main limitations are frequent flooding and the high water table late in winter and in spring. The risk of flooding can be reduced by the use of dikes along the Portneuf River. Most climatically adapted crops can be grown if artificial drainage is provided.

This unit is well suited to pasture. The main limitations are the hazard of flooding and wetness. The potential natural plant community on this unit is mainly slender wheatgrass and sedges. If the plant cover is disturbed, protection from flooding is needed to control gullying, streambank cutting, and sheet erosion. Plants that tolerate wetness should be seeded. Grazing should be delayed until the soil has drained sufficiently and is firm enough to withstand trampling by livestock.

This map unit is in capability subclass IVw.

58—Inkom silt loam, drained, 0 to 1 percent slopes. This very deep, moderately well drained soil is on stream terraces and flood plains. It formed in silty alluvium derived from mixed sources. The drainage of this unit has been altered either by natural downcutting of streams or by dredging and straightening of stream channels. Elevation is about 4,500 to 5,400 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 90 days.

Typically, the surface layer is grayish brown, calcareous silt loam 7 inches thick. The subsoil to a depth of 60 inches or more is gray, grayish brown, and light gray, calcareous silt loam.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is Joevar silt loam in well drained areas along the edges of this unit; about 5 percent is Arbone gravelly silt loam and about 5 percent is Wursten gravelly silt loam, both of which are at the mouth of lateral drainageways. The remaining 5 percent is small areas of Hondoho cobbly silt loam, Bear Lake silt loam, Downata silt loam, soils that are similar to this Inkom soil but are underlain by sand and gravel at a depth of 15 to 40 inches, and soils that are similar to this Inkom soil but are not calcareous.

Permeability of this Inkom soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. A seasonal high water table is at a depth of 2 to 4 feet from February through June. In both irrigated and nonirrigated areas, runoff is slow and the hazard of water erosion is slight. This soil is subject to occasional flooding for brief periods from January through June.

Most areas of this unit are used as irrigated and nonirrigated cropland. A few areas are used for homesite and urban development.

This unit is well suited to irrigated crops. It is used for the production of wheat, barley, and alfalfa hay. The main limitation is occasional flooding during spring runoff or summer storms. Sprinkler irrigation is a suitable method of applying water. Water should be applied in amounts sufficient to wet the root zone but in amounts small enough to minimize the leaching of plant nutrients. Crop residue left on or near the surface helps to conserve moisture, maintain tilth, and control erosion.

This unit is well suited to nonirrigated crops. It is used for the production of wheat, barley, and alfalfa hay. The main limitations are low precipitation and occasional flooding during spring runoff or summer storms. Because precipitation is marginal for annual cropping, the cropping system commonly includes small grain and summer fallow. Leaving crop residue on or near the surface helps to conserve moisture, maintain tilth, and control erosion.

This unit is poorly suited to homesite and urban development. The main limitations are the seasonal high water table and occasional flooding. The seasonal high water table may cause failure of septic tank absorption fields. Specially designed waste disposal systems are needed. Roads and streets should be located above the expected flood level. Dikes and channels that have outlets for floodwater can be used to protect buildings and onsite sewage disposal systems from flooding.

This map unit is in capability subclass IIIw, irrigated and nonirrigated.

59—Ireland-Camelback-Rock outcrop complex, 30 to 60 percent slopes. This map unit is on mountainsides and ridges. The native vegetation is mainly shrubs and grasses. Elevation is about 5,500 to 7,500 feet. The average annual precipitation is about 18 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 75 days.

This unit is about 40 percent Ireland extremely stony silt loam, about 30 percent Camelback very cobbly silt loam, and about 15 percent Rock outcrop. The Ireland soil is on convex mountainsides and ridges, the Camelback soil is on slightly concave, north- and east-facing side slopes, and Rock outcrop is on ridgetops and the upper part of side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Moonlight silt loam on concave, north- and east-facing side slopes and about 5 percent is Cedarhill very cobbly silt loam on south-facing side slopes. The remaining 5 percent is small areas of Pavohroo silt loam, Greys silt loam, and Dateman cobbly silt loam, and very deep soils along drainageways.

The Ireland soil is moderately deep and well drained. It formed in alluvium, colluvium, and residuum derived dominantly from dolomite and limestone. Typically, the surface layer is brown extremely stony silt loam 7 inches thick. The upper 5 inches of the subsoil is brown very stony silt loam, and the lower 18 inches is brown, calcareous extremely stony silt loam. Interbedded dolomite and limestone are at a depth of 30 inches. Depth to bedrock ranges from 20 to 40 inches.

Permeability of the Ireland soil is moderate. Available water capacity is very low. Effective rooting depth is 20 to 40 inches. Runoff is very rapid, and the hazard of water erosion is very high.

The Camelback soil is deep and well drained. It formed in alluvium, colluvium, and residuum derived dominantly from sedimentary and metasedimentary rock. Typically, the surface layer is dark brown very cobbly silt loam 21 inches thick. The subsoil is dark brown and yellowish brown extremely cobbly silt loam 21 inches thick. Bedrock is at a depth of 42 inches. Depth to bedrock ranges from 40 to 60 inches.

Permeability of the Camelback soil is moderate. Available water capacity is low. Effective rooting depth is 40 to 60 inches. Runoff is very rapid, and the hazard of water erosion is very high.

Rock outcrop consists of areas of exposed interbedded dolomite, limestone, and quartzite. It is dominantly on ridgetops, but in some areas it consists of vertical cliffs. The cliffs generally are on the upper part of mountainsides.

This unit is used as rangeland.

This unit is suited to use as rangeland. The potential natural plant community on the Ireland soil is mainly bluebunch wheatgrass, curlleaf mountainmahogany, and mountain big sagebrush. The potential natural plant community on the Camelback soil is mainly bluebunch wheatgrass and mountain big sagebrush. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical on the unit because of the steepness of slope, the areas of Rock outcrop, and the extremely stony surface of the Ireland soil.

This map unit is in capability subclass VIIs.

60—Ireland-Dateman-Pavohroo association, 20 to 60 percent slopes. This map unit is on mountainsides. Elevation is about 6,000 to 8,000 feet.

This unit is about 35 percent Ireland extremely stony silt loam, about 20 percent Dateman cobbly silt loam, and about 20 percent Pavohroo silt loam. The Ireland soil is on convex, south- and west-facing side slopes, the Dateman soil is on north- and east-facing, convex side slopes, and the Pavohroo soil is in concave areas on north- and east-facing side slopes.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is soils that are similar to the Ireland soil but are less than 20 inches deep to bedrock and are on the upper part of convex, south- and west-facing side slopes and on ridgetops, about 5 percent is soils that are similar to the Dateman soil but have more than 35 percent clay in the subsoil and are on north- and east-facing side slopes, and about 5 percent is a very deep soil in drainageways. The remaining 5 percent is small areas of Rock outcrop, Greys silt loam, and soils that have slopes of less than 20 percent.

The Ireland soil is moderately deep and well drained. It formed in alluvium, colluvium, and residuum derived dominantly from dolomite and limestone. The native vegetation is mainly small trees, shrubs, and grasses. The average annual precipitation is about 18 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 75 days. Typically, the surface layer is brown extremely stony silt loam 7 inches thick. The upper 5 inches of the subsoil is brown very stony silt loam, and the lower 18 inches is brown, calcareous extremely stony silt loam. Bedrock is at a depth of 30 inches. Depth to bedrock ranges from 20 to 40 inches.

Permeability of the Ireland soil is moderate. Available water capacity is very low. Effective rooting depth is 20 to 40 inches. Runoff is very rapid, and the hazard of water erosion is very high.

The Dateman soil is moderately deep and well drained. It formed in alluvium, colluvium, and residuum derived dominantly from dolomite and limestone. The native vegetation is mainly trees, shrubs, and grasses. The average annual precipitation is about 23 inches, the average annual air temperature is about 39 degrees F, and the average frost-free period is about 50 days. Typically, an intermittent duff layer of needles, twigs, and grasses about 2 inches thick is on the surface. The surface layer is dark grayish brown cobbly silt loam 9 inches thick. The subsoil is brown and yellowish brown extremely cobbly silt loam 26 inches thick. Bedrock is at a depth of 35 inches. Depth to bedrock ranges from 30 to 40 inches.

Permeability of the Dateman soil is moderate. Available water capacity is low. Effective rooting depth is 30 to 40 inches. Runoff is very rapid, and the hazard of water erosion is very high.

The Pavohroo soil is very deep and well drained. It formed in silty alluvium and colluvium derived from loess, dolomite, and limestone. The native vegetation is mainly trees, shrubs, and grasses. The average annual precipitation is about 25 inches, the average annual air temperature is about 38 degrees F, and the average frost-free period is about 40 days. Typically, an intermittent duff layer of needles, leaves, and twigs about 3 inches thick is on the surface. The surface layer is dark grayish brown silt loam 26 inches thick. The subsoil to a depth of 60 inches or more is pale brown stony loam.

Permeability of the Pavohroo soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland, grazeable woodland, and woodland.

The potential natural plant community on the Ireland soil is mainly curlleaf mountainmahogany, mountain big sagebrush, and bluebunch wheatgrass. The potential natural plant community on the Dateman and Pavohroo soils is mainly an overstory of Douglas-fir and an understory dominated by mountain snowberry and pine reedgrass.

This Ireland soil is suited to use as rangeland. It is limited mainly by the extremely stony surface layer, the steepness of slope, and the very high hazard of water erosion. Use of forage by livestock in some areas of this soil is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical on this soil because of the extremely stony surface layer, the steepness of slope, and the very high hazard of water erosion.

The Dateman and Pavohroo soils are suited to the production of understory plants suitable for grazing. They can produce additional forage for livestock and wildlife for 15 to 30 years after the canopy is opened by logging, fire, or other disturbance. During this period annual production of understory ranges from 3,000 pounds of air-dry vegetation per acre to less than 200 pounds per acre as the canopy closes. In spring, cold soil temperatures limit early plant growth. Grazing should be delayed until the plants have achieved sufficient growth.

The Dateman soil is suited to the production of Douglas-fir. On the basis of a 50-year site curve, the average site index for Douglas-fir is 60. Yield tables indicate that the maximum average annual growth is 69 cubic feet per acre of Douglas-fir at 40 years of age. The main concerns in producing and harvesting timber are the very high hazard of water erosion, the steepness of slope, and the hazard of plant competition. Minimizing the risk of erosion is essential in harvesting timber.

Excessive erosion is avoided by carefully planning the construction and maintenance of logging roads, skid trails, and landings. Cuts and fills should be seeded, and water bars and culverts should be installed. The steepness of slope limits the kinds of equipment that can be used for harvesting timber. If the overstory canopy is removed, the soil temperature increases. This may hinder the regeneration of timber. Competition from quaking aspen, shrubs, and grasses may also hinder regeneration. If the site is not adequately prepared, competition from undesirable plants can prevent or prolong natural or artificial reestablishment of trees.

The Pavohroo soil is well suited to the production of Douglas-fir (fig. 6). On the basis of a 50-year site curve, the average site index for Douglas-fir is 65. Yield tables indicate that the maximum average annual growth is 85 cubic feet per acre of Douglas-fir at 40 years of age. The main concerns in producing and harvesting timber are the very high hazard of water erosion, the steepness of slope, and plant competition. Minimizing the risk of erosion is essential in harvesting timber. Excessive erosion is avoided by carefully planning the construction and maintenance of logging roads, skid trails, and landings. Cuts and fills should be seeded, and water bars and culverts should be installed. The steepness of slope limits the kinds of equipment that can be used for harvesting timber. If the overstory canopy is removed, the soil temperature increases. This may hinder the regeneration of timber. Competition from quaking aspen, shrubs, and grasses may also hinder regeneration. If the site is not adequately prepared, competition from undesirable plants can prevent or prolong natural or artificial reestablishment of trees.

The Ireland soil is in capability subclass VIIs, and the Dateman and Pavohroo soils are in capability subclass VIIe.

61—Ireland-Hades-Cedarhill complex, 20 to 60 percent slopes. This map unit is on mountainsides and ridges. The native vegetation is mainly small trees, shrubs, and grasses. Elevation is about 5,500 to 6,500 feet. The average annual precipitation is about 16 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 75 days.

This unit is about 35 percent Ireland extremely stony silt loam, about 30 percent Hades gravelly silt loam, and about 20 percent Cedarhill very cobbly silt loam. The Ireland soil is on dominantly south- and west-facing, convex side slopes of mountains, the Hades soil is on slightly concave, north- and east-facing side slopes, and the Cedarhill soil is dominantly on the lower part of south- and west-facing side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 10 percent is Moonlight silt loam near drainageways on concave, north- and east-facing side slopes. The remaining 5 percent is small areas of Rock outcrop, soils that are similar to this Ireland soil but are less than 20 inches deep to bedrock, Pavohroo silt loam, Rexburg silt loam, soils that are similar to the Hades soil but are in drainageways, and soils that have slopes of less than 20 percent or more than 60 percent.

The Ireland soil is moderately deep and well drained. It formed in alluvium, colluvium, and residuum derived dominantly from dolomite and limestone. Slope is 30 to 60 percent. Typically, the surface layer is brown extremely stony silt loam 7 inches thick. The upper 5 inches of the subsoil is brown very stony silt loam, and the lower 18 inches is brown, calcareous extremely stony silt loam. Interbedded dolomite and limestone are at a depth of 30 inches. Depth to bedrock ranges from 20 to 40 inches.

Permeability of the Ireland soil is moderate. Available water capacity is very low. Effective rooting depth is 20 to 40 inches. Runoff is very rapid, and the hazard of water erosion is very high.

The Hades soil is very deep and well drained. It formed in mixed alluvium derived from loess and quartzite. Typically, the surface layer is dark grayish brown and dark brown gravelly silt loam 7 inches thick. The upper 7 inches of the subsoil is dark brown gravelly silt loam, and the lower part to a depth of 60 inches or more is brown, yellowish brown, and light yellowish brown gravelly silty clay loam.

Permeability of the Hades soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Cedarhill soil is very deep and well drained. It formed in alluvium and colluvium derived dominantly from limestone and other related sedimentary and metasedimentary rock. Typically, the surface layer is brown, calcareous very cobbly silt loam 9 inches thick. The upper 19 inches of the underlying material is very pale brown and light yellowish brown, calcareous very cobbly silt loam, and the lower part to a depth of 60 inches or more is light yellowish brown, calcareous very cobbly loam.

Permeability of the Cedarhill soil is moderate. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Ireland and Hades soils are used as rangeland. The Cedarhill soil is used as grazeable woodland and woodland.

This unit is suited to use as rangeland and grazeable woodland. The potential natural plant community on the Ireland soil is mainly bluebunch wheatgrass, curlleaf mountainmahogany, and mountain big sagebrush. The potential natural plant community on the Hades soil is mainly bluebunch wheatgrass and mountain big

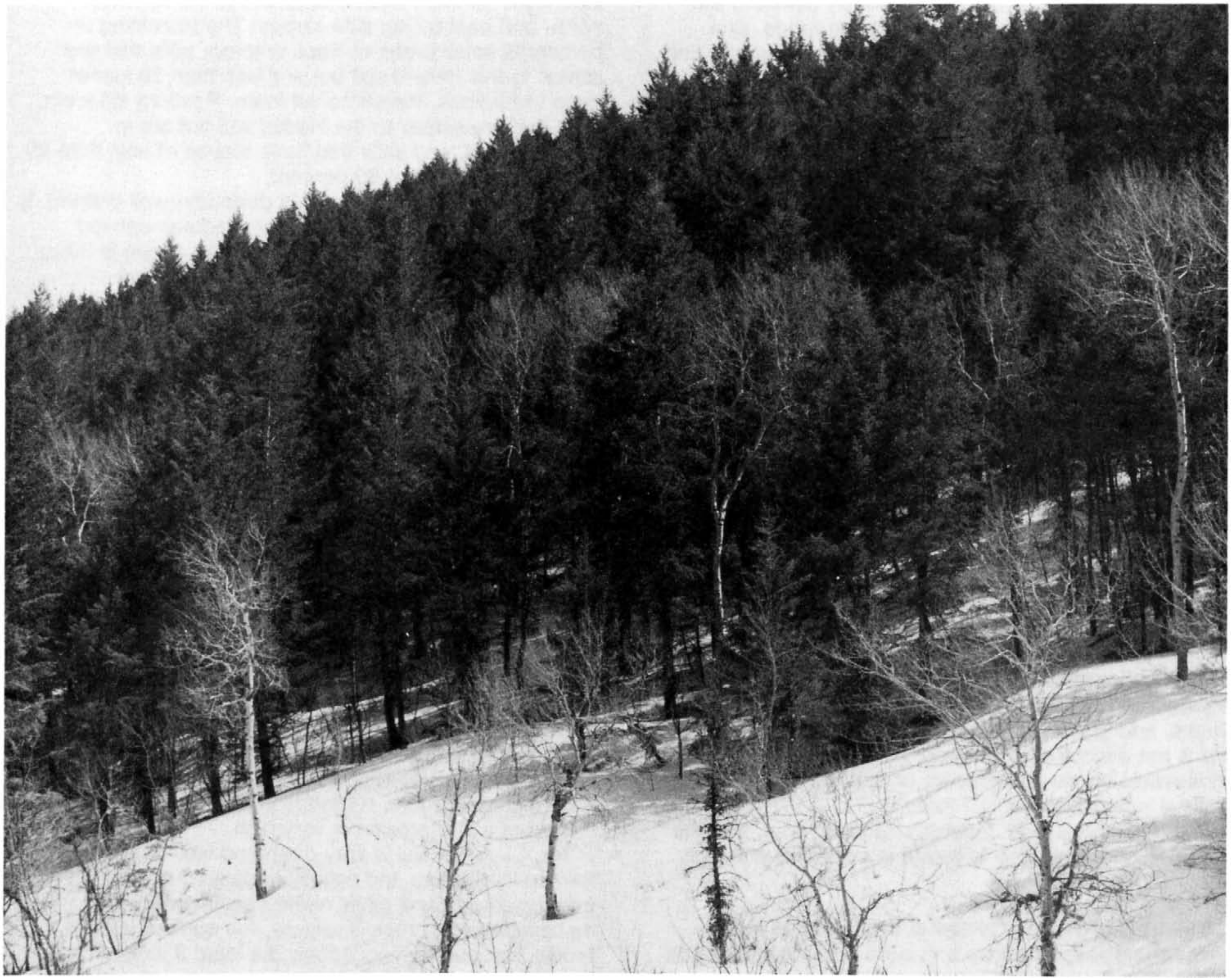

Figure 6.—Douglas-fir on Pavohroo silt loam in an area of Ireland-Dateman-Pavohroo association, 20 to 60 percent slopes.

sagebrush. The potential natural plant community on the Cedarhill soil is mainly bluebunch wheatgrass, Indian ricegrass, and Utah juniper. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical on the unit because of the steepness of slope, the extremely stony surface of the Ireland soil, and the very cobbly surface of the Cedarhill soil.

In a few areas of the Cedarhill soil, some Utah juniper is cut for fenceposts and firewood. On the basis of a basal area attained when the diameter of trees at a height of 1 foot averages 5 inches, the average site index for Utah juniper is 105. Yield tables indicate that the maximum average annual growth is 31 cubic feet per acre of Utah juniper at 100 years of age.

This map unit is in capability subclass VIIe.

62—Joes silt loam, 1 to 4 percent slopes. This very deep, well drained soil is on fan terraces. It formed in loess and in silty alluvium derived from loess. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,500 to 6,000 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

Typically, the surface layer is dark grayish brown, calcareous silt loam 6 inches thick. The subsoil is grayish brown, calcareous silt loam 7 inches thick. The substratum to a depth of 60 inches or more is very pale brown, light yellowish brown, and pale brown, calcareous silt loam.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 10 percent is Hondoho cobbly silt loam on convex side slopes along drainageways and about 5 percent is Watercanyon silt loam on south- and west-facing, convex side slopes and on eroded ridges. The remaining 5 percent is small areas of Lanoak silt loam and soils that have slopes of more than 4 percent.

Permeability of this Joes soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is moderate.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as rangeland.

The unit is well suited to use as nonirrigated cropland. It is used for the production of wheat and barley. It is limited mainly by low precipitation and the hazard of water erosion. Because precipitation is marginal for annual cropping, the cropping system commonly includes small grain and summer fallow. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are performed on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

The unit is very susceptible to the formation of a tillage pan and other compacted layers, which reduce the permeability of the soil and restrict root penetration. Deep subsoiling in fall helps to break up the compacted layers.

The unit is well suited to use as rangeland. The potential natural plant community is mainly mountain big sagebrush and bluebunch wheatgrass. The suitability of this unit for rangeland seeding is good.

This map unit is in capability subclass IIIc.

63—Joes silt loam, 4 to 12 percent slopes. This very deep, well drained soil is on fan terraces. It formed in loess and in silty alluvium derived from loess. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,500 to 6,000 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

Typically, the surface layer is dark grayish brown, calcareous silt loam 6 inches thick. The subsoil is grayish brown, calcareous silt loam 7 inches thick. The substratum to a depth of 60 inches or more is very pale brown, light yellowish brown, and pale brown, calcareous silt loam.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 10 percent is Hondoho cobbly silt loam on convex side slopes along drainageways and about 5 percent is Lanoak silt loam on short, concave, north- and east-facing side slopes. The remaining 5 percent is small areas of Watercanyon silt loam and soils that have slopes of less than 4 percent or more than 12 percent.

Permeability of this Joes soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as rangeland.

The unit is well suited to use as nonirrigated cropland. It is used for the production of wheat and barley. It is limited mainly by low precipitation and the high hazard of water erosion. Because precipitation is marginal for annual cropping, the cropping system commonly includes small grain and summer fallow. Terraces reduce runoff and the risk of erosion and help to conserve moisture. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

The unit is very susceptible to the formation of a tillage pan and other compacted layers, which reduce the permeability of the soil and restrict root penetration. Deep subsoiling in fall helps to break up the compacted layers.

The unit is well suited to use as rangeland. The potential natural plant community on this Joes soil is mainly mountain big sagebrush and bluebunch wheatgrass. It has few limitations. The unit is suited to the use of mechanical equipment such as rangeland plows and drills.

This map unit is in capability subclass IIIe.

64—Joevar silt loam, 0 to 3 percent slopes. This very deep, well drained soil is on terraces. It formed in silty alluvium derived dominantly from loess. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,500 to 5,400 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

Typically, the surface layer is brown, calcareous silt loam 10 inches thick. The subsoil is brown, calcareous silt loam 23 inches thick. The next layer to a depth of 60 inches or more is a buried subsoil of pale brown, calcareous silt loam.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Hondoho cobbly silt loam near drainageways and about 5 percent is Inkom silt loam in concave areas. The remaining 5 percent is small areas of Arbone silt loam, Arimo silt loam, and soils that are similar to this Joevar soil but have a weakly cemented pan at a depth of 15 to 30 inches.

Permeability of this Joevar soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. In both irrigated and nonirrigated areas, runoff is slow and the hazard of water erosion is slight.

Most areas of this unit are used as irrigated and nonirrigated cropland. A few areas are used as rangeland.

This unit is well suited to irrigated crops. It is used for the production of wheat, barley, and alfalfa hay. It has few limitations. Sprinkler irrigation is a suitable method of applying water. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion. Irrigation water needs to be applied at a rate that insures optimum production without increasing deep percolation, runoff, and erosion. Crop residue left on or near the surface helps to conserve moisture, maintain tilth, and control erosion.

This unit is well suited to nonirrigated crops. It is limited mainly by low precipitation. Because precipitation is marginal for annual cropping, the cropping system commonly includes small grain and summer fallow. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

This unit is very susceptible to the formation of a tillage pan and other compacted layers, which reduce the permeability of the soil and restrict root penetration. Deep subsoiling in fall helps to break up the compacted layers.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly bluebunch wheatgrass, basin big sagebrush, and Nevada bluegrass. The suitability of this unit for rangeland seeding is good.

This map unit is in capability subclass IIIc, irrigated and nonirrigated.

65—Lanoak silt loam, 1 to 4 percent slopes. This very deep, well drained soil is on terraces. It formed in loess and in silty alluvium derived from loess. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,900 to 5,600 feet. The average annual precipitation is about 17 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 80 days.

Typically, the surface layer is dark grayish brown silt loam 22 inches thick. The subsoil is grayish brown and pale brown silt loam 22 inches thick. The substratum to a depth of 60 inches or more is light gray, calcareous silt loam.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Joevar silt loam in concave areas and along drainageways and about 5 percent is Hondoho gravelly silt loam in convex areas along drainageways. The remaining 5 percent is small areas of Arbone silt loam and soils that have slopes of less than 1 percent or more than 4 percent.

Permeability of this Lanoak soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is moderate.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as rangeland.

The Lanoak soil is well suited to nonirrigated crops. It is used for the production of wheat, barley, and a small amount of alfalfa hay. The unit is limited mainly by the short growing season and the hazard of water erosion. In some years the growing season is shorter than normal, which significantly reduces yields of crops. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. The suitability of this unit for rangeland seeding is good.

This map unit is in capability subclass IIIc.

66—Lanoak silt loam, 4 to 12 percent slopes. This very deep, well drained soil is on foothills and fan terraces. It formed in loess and in silty alluvium derived from loess. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 5,000 to 6,500 feet. The average annual precipitation is about 17 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 80 days.

Typically, the surface layer is dark grayish brown silt loam 22 inches thick. The subsoil is grayish brown and pale brown silt loam 22 inches thick. The substratum to a depth of 60 inches or more is light gray, calcareous silt loam.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Ririe silt loam on south- and west-facing side slopes and hilltops and about 5 percent is Hondoho gravelly silt loam on side slopes along drainageways. The remaining 5 percent is small areas of Coalbank very fine sandy loam and soils that have slopes of less than 4 percent or more than 12 percent.

Permeability of this Lanoak soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as rangeland.

This unit is well suited to nonirrigated crops. It is used for the production of wheat, barley, and a small amount of alfalfa hay. The unit is limited mainly by the high hazard of water erosion and the short growing season. Terraces reduce runoff and the risk of erosion and help to conserve moisture. Erosion can be reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. In some years the growing season is shorter than normal, which significantly reduces yields of crops on the unit.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. The unit is suited to the use of mechanical equipment such as rangeland plows and drills.

This map unit is in capability subclass IIIe.

67—Lanoak silt loam, 12 to 20 percent slopes. This very deep, well drained soil is on north- and east-facing side slopes of foothills and fan terraces. It formed in loess and in silty alluvium derived from loess. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 5,000 to 6,500 feet. The average annual precipitation is about 17 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 80 days.

Typically, the surface layer is dark grayish brown silt loam 22 inches thick. The subsoil is grayish brown and pale brown silt loam 22 inches thick. The substratum to a depth of 60 inches or more is light gray, calcareous silt loam.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Camelback gravelly silt loam on convex side slopes and about 5 percent is Hades gravelly silt loam along drainageways. The remaining 5 percent is small areas of Moonlight silt loam, Valmar very cobbly silt loam, Watercanyon silt loam, and soils that have slopes of less than 12 percent or more than 20 percent.

Permeability of this Lanoak soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as rangeland.

This unit is suited to nonirrigated crops. It is used for the production of wheat, barley, and a small amount of alfalfa hay. The unit is limited mainly by the very high hazard of water erosion and the short growing season. Erosion can be reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. In some years the growing season is shorter than normal, which significantly reduces yields of crops.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. This unit is suited to the use of mechanical equipment such as rangeland plows and drills. The main limitation is the very high hazard of water erosion. Nonmechanical treatment practices may be more suitable.

This map unit is in capability subclass IVe.

68—Lanoak silt loam, 20 to 30 percent slopes. This very deep, well drained soil is on north- and east-facing side slopes of foothills and fan terraces. It formed in loess and in silty alluvium derived from loess. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 5,000 to 6,500 feet. The average annual precipitation is about 17 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 80 days.

Typically, the surface layer is dark grayish brown silt loam 22 inches thick. The subsoil is grayish brown and pale brown silt loam 22 inches thick. The substratum to a depth of 60 inches or more is light gray, calcareous silt loam.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Camelback gravelly silt loam on convex side slopes and about 5 percent is Hades gravelly silt loam along drainageways. The remaining 5 percent is small areas of Moonlight silt loam, Pavohroo silt loam, Ririe silt loam, Watercanyon silt loam, and soils that have slopes of less than 20 percent or more than 30 percent.

Permeability of this Lanoak soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

Most areas of this unit are used as rangeland. A few areas are used as nonirrigated cropland.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. Use of mechanical equipment such as rangeland plows and drills is limited by the steepness of slope and the very high hazard of water erosion. Nonmechanical treatment practices may be more suitable.

This unit is poorly suited to nonirrigated crops. It is used for the production of wheat, barley, and a small amount of alfalfa hay. The unit is limited mainly by the steepness of slope, the very high hazard of water erosion, and the short growing season. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. Seeding to permanent cover may be needed to reduce erosion. In some years the growing season is shorter than normal, which significantly reduces yields of crops.

This map unit is in capability subclass VIe.

69—Lanoak-Camelback complex, 20 to 50 percent slopes. This map unit is on mountainsides. The native vegetation is mainly shrubs and grasses. Elevation is about 5,200 to 6,200 feet. The average annual precipitation is about 18 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 85 days.

This unit is about 50 percent Lanoak silt loam and about 35 percent Camelback gravelly silt loam. The Lanoak soil is on north- and east-facing, slightly concave side slopes, and the Camelback soil is on north- and east-facing, convex side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 10 percent is Moonlight silt loam on concave, north- and east-facing side slopes. The remaining 5 percent is small areas of Valmar very cobbly silt loam and Rock outcrop.

The Lanoak soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. Typically, the surface layer is dark grayish brown silt loam 22 inches thick. The subsoil is grayish brown and pale brown silt loam 22 inches thick. The substratum to a depth of 60 inches or more is light gray, calcareous silt loam.

Permeability of the Lanoak soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Camelback soil is deep and well drained. It formed in alluvium, colluvium, and residuum derived from sedimentary and metasedimentary rock. Typically, the surface layer is dark brown gravelly silt loam 21 inches thick. The subsoil is dark brown and yellowish brown extremely cobbly silt loam 21 inches thick. Bedrock is at a depth of 42 inches. Depth to bedrock ranges from 40 to 60 inches.

Permeability of the Camelback soil is moderate. Available water capacity is low. Effective rooting depth is 40 to 60 inches. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is suited to use as rangeland. The potential natural plant community on the unit is mainly bluebunch wheatgrass and mountain big sagebrush. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical on the unit because of the steepness of slope and the very high hazard of water erosion.

This map unit is in capability subclass VIIe.

70—Lanoak-Greys association, 4 to 12 percent slopes. This map unit is on foothills and fan terraces. Elevation is about 5,500 to 6,500 feet.

This unit is about 45 percent Lanoak silt loam and about 35 percent Greys silt loam. The Lanoak soil is on convex, south- and west-facing side slopes, and the Greys soil is on concave, north- and east-facing side slopes.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is Camelback gravelly silt loam on the upper part of convex side slopes, about 5 percent is very deep soils in drainageways, and about 5 percent is soils that have slopes of less than 4 percent or more than 12 percent. The remaining 5 percent is small areas of Trailcreek very fine sandy loam and soils that are similar to the Greys soil but have more than 35 percent rock fragments in the profile.

The Lanoak soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. The vegetation in areas not cultivated is mainly shrubs and grasses. The average annual precipitation is about 18 inches, the average annual air temperature is about 42 degrees F, and the average growing season is about 80 days. Typically, the surface layer is dark grayish brown silt loam 22 inches thick. The subsoil is grayish brown and pale brown silt loam 22 inches thick. The substratum to a depth of 60 inches or more is light gray, calcareous silt loam.

Permeability of the Lanoak soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

The Greys soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. The vegetation in areas not cultivated is mainly trees and grasses. The average annual precipitation is about 20 inches, the average annual air temperature is about 40 degrees F, and the average growing season is about 70 days. Typically, an intermittent duff layer of leaves, twigs, and grasses about 3 inches thick is on the surface. The surface layer is dark grayish brown silt loam 8 inches thick. The upper 4 inches of the subsurface layer is light brownish gray silt loam, and the lower part to a depth of 19 inches is 60 percent light brownish gray silt loam and 40 percent brown silt loam. The subsoil to a depth of 60 inches or more is brown, light yellowish brown, and pale brown silt loam.

Permeability of the Greys soil is moderately slow. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

This unit is used as rangeland, grazeable woodland, and nonirrigated cropland. A few small areas of the Greys soil are used as woodland.

The potential natural plant community on the Lanoak soil is mainly mountain big sagebrush and bluebunch wheatgrass. The potential natural plant community on the Greys soil is mainly an overstory of quaking aspen and an understory dominated by pine reedgrass (fig. 7).

The Lanoak soil is well suited to use as rangeland. It has few limitations. The soil is suited to the use of mechanical equipment such as rangeland plows and drills. The potential of this soil for rangeland seeding is good.

The Greys soil is well suited to the production of understory plants suitable for grazing. It can produce additional forage for livestock and wildlife for 10 to 20 years after the canopy is opened by logging, fire, or other disturbance. During this period annual production of understory ranges from 3,000 pounds of air-dry vegetation per acre to less than 300 pounds per acre as the canopy closes. In spring, cold soil temperatures limit early plant growth. Grazing should be delayed until the plants have achieved sufficient growth.

The Lanoak soil is well suited to nonirrigated crops. It is used for the production of wheat, barley, and a small amount of alfalfa hay. The soil is limited mainly by the high hazard of water erosion and the short growing season. Terraces reduce runoff and the risk of erosion and help to conserve moisture. Erosion can be reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. In some years the frost-free period is shorter than normal, which significantly reduces yields of crops on this soil.

The Greys soil is suited to nonirrigated crops. It is used for the production of wheat, barley, and a small amount of alfalfa hay. The soil is limited mainly by the high hazard of water erosion, a short growing season, and cool soil temperatures. Terraces reduce runoff and the risk of erosion and help to conserve moisture. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. In some years the growing season is shorter than normal, which significantly reduces yields of crops. In spring, cool soil temperatures may retard seed germination and limit early plant growth.

The Greys soil is suited to the production of quaking aspen. On the basis of an 80-year site curve, the average site index for quaking aspen is 65. Yield tables indicate that the maximum average annual growth is 36 cubic feet per acre of quaking aspen at 80 years of age. Most of the aspen harvested is used as firewood.

The Lanoak soil is in capability subclass IIIe, and the Greys soil is in capability subclass IVe.

71—Lanoak-Greys association, 12 to 20 percent slopes. This map unit is on foothills and fan terraces. Elevation is about 5,500 to 6,600 feet.

This unit is about 45 percent Lanoak silt loam and about 30 percent Greys silt loam. The Lanoak soil is on convex, south- and west-facing side slopes, and the Greys soil is on concave, north- and east-facing side slopes.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is

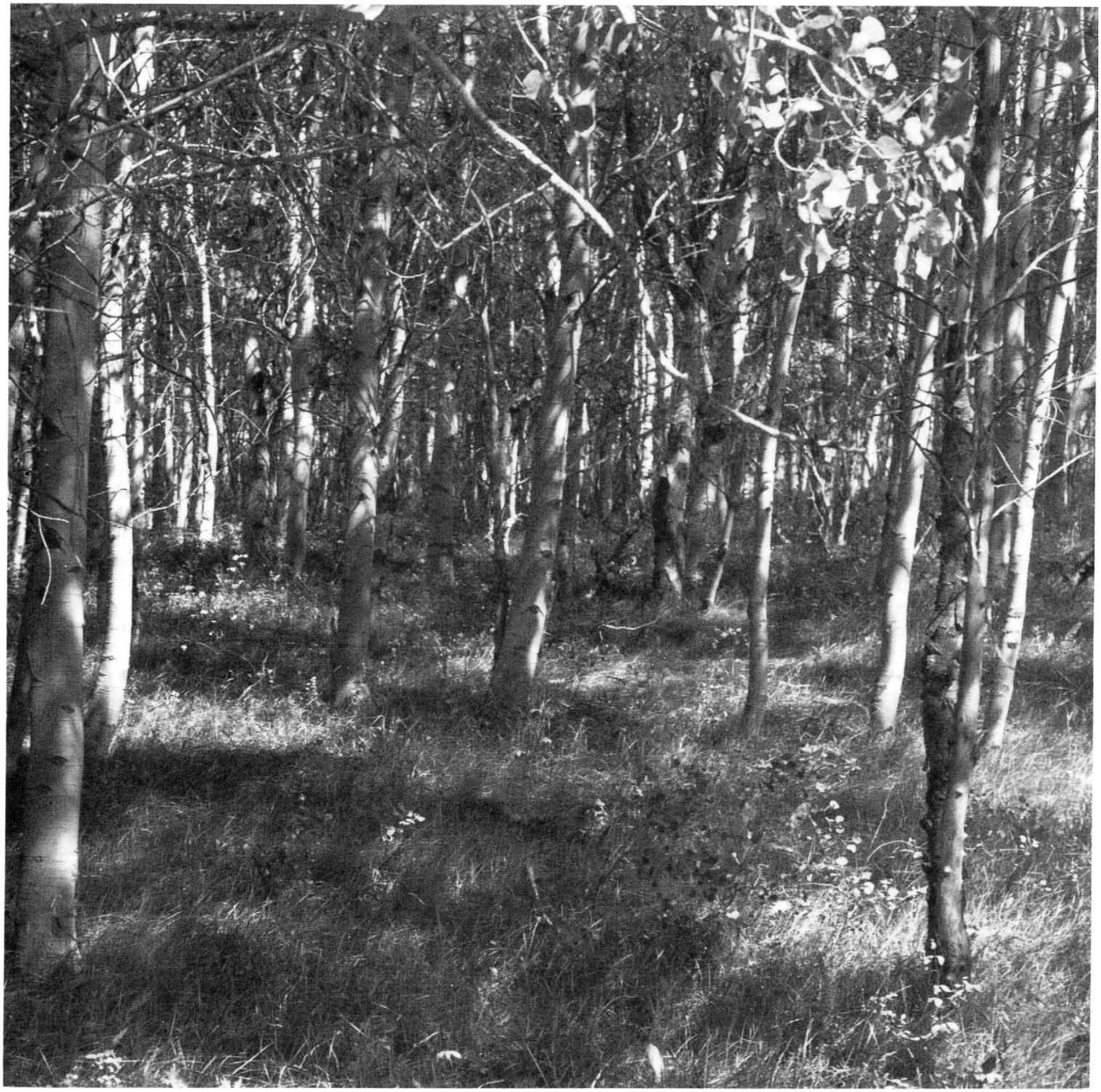

Figure 7.—An overstory of quaking aspen and an understory dominated by pine reedgrass on Greys silt loam in an area of Lanoak-Greys association, 4 to 12 percent slopes.

Camelback cobbly silt loam on south-facing side slopes along drainageways and about 5 percent is Hades gravelly silt loam on north-facing side slopes along drainageways. The remaining 10 percent is small areas of Manila silt loam, Watercanyon silt loam, Ririe silt loam, and soils that have slopes of less than 12 percent or more than 20 percent.

The Lanoak soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. The vegetation in areas not cultivated is mainly shrubs and grasses. The average annual precipitation is about 18 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 80 days. Typically, the surface layer is dark grayish brown silt loam 22 inches thick. The subsoil is grayish brown and pale brown silt loam 22 inches thick. The substratum to a depth of 60 inches or more is light gray, calcareous silt loam.

Permeability of the Lanoak soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Greys soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. The vegetation in areas not cultivated is mainly trees and grasses. The average annual precipitation is about 20 inches, the average annual air temperature is about 40 degrees F, and the average frost-free period is about 70 days. Typically, an intermittent duff layer of leaves, twigs, and grasses about 3 inches thick is on the surface. The surface layer is dark grayish brown silt loam 8 inches thick. The upper 4 inches of the subsurface layer is light brownish gray silt loam, and the lower part to a depth of 19 inches is 60 percent light brownish gray silt loam and 40 percent brown silt loam. The subsoil to a depth of 60 inches or more is brown, light yellowish brown, and pale brown silt loam.

Permeability of the Greys soil is moderately slow. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland, grazeable woodland, and nonirrigated cropland. A few small areas of the Greys soil are used as woodland.

The potential natural plant community on the Lanoak soil is mainly mountain big sagebrush and bluebunch wheatgrass. The potential natural plant community on the Greys soil is mainly an overstory of quaking aspen and an understory dominated by pine reedgrass.

The Lanoak soil is well suited to use as rangeland. It is suited to the use of mechanical equipment such as rangeland plows and drills. The main limitation is the very high hazard of water erosion. Nonmechanical treatment practices may be more suitable.

The Greys soil is well suited to the production of understory plants suitable for grazing. It can produce additional forage for livestock and wildlife for 10 to 20 years after the canopy is opened by logging, fire, or some other disturbance. During this period annual production of understory ranges from 3,000 pounds of air-dry vegetation per acre to less than 300 pounds per acre as the canopy closes. In spring, cold soil temperatures limit early plant growth. Grazing should be delayed until the plants have achieved sufficient growth.

The Lanoak soil is suited to nonirrigated crops. It is used for the production of wheat, barley, and a small amount of alfalfa hay. The soil is limited mainly by the very high hazard of water erosion and the short growing season. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. In some years the growing season is shorter than normal, which significantly reduces yields of crops on this soil.

The Greys soil is suited to nonirrigated crops. It is used for the production of wheat, barley, and a small amount of alfalfa hay. The soil is limited mainly by the very high hazard of water erosion, a short growing season, and cool soil temperatures. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. In some years the growing season is shorter than normal, which significantly reduces yields of crops. In spring, cool soil temperatures may retard seed germination and limit early plant growth.

The Greys soil is suited to the production of quaking aspen. On the basis of an 80-year site curve, the average site index for quaking aspen is 65. Yield tables indicate that the maximum average annual growth is 36 cubic feet per acre of quaking aspen at 80 years of age. Most of the aspen harvested is used as firewood.

This map unit is in capability subclass IVe.

72—Lanoak-Hades complex, 6 to 20 percent slopes. This map unit is on foothills and fan terraces. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 5,500 to 6,500 feet. The average annual precipitation is about 17 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 80 days.

This unit is about 40 percent Lanoak silt loam and about 35 percent Hades gravelly silt loam. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 5 percent is Valmar extremely stony silt loam on ridgetops and the upper part of side slopes, about 5 percent is Camelback very cobbly silt loam on convex side slopes, about 5 percent is Moonlight silt loam on concave, north- and east-facing side slopes, and about 5 percent is Greys silt loam on concave, north- and east-facing side slopes. The remaining 5 percent is small areas of Cedarhill gravelly silt loam, high precipitation; Coalbank very fine sandy loam; and Trailcreek very fine sandy loam.

The Lanoak soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. Typically, the surface layer is dark grayish brown silt loam 22 inches thick. The subsoil is grayish brown and pale brown silt loam 22 inches thick. The substratum to a depth of 60 inches or more is light gray, calcareous silt loam.

Permeability of the Lanoak soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Hades soil is very deep and well drained. It formed in mixed alluvium derived from loess and quartzite. Typically, the surface layer is dark grayish brown and dark brown gravelly silt loam 7 inches thick. The upper 7 inches of the subsoil is dark brown gravelly silt loam, and the lower part to a depth of 60 inches or more is brown, yellowish brown, and light yellowish brown gravelly silty clay loam.

Permeability of the Hades soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

Most areas of this unit are used as rangeland. A few areas are used as nonirrigated cropland.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly bluebunch wheatgrass and mountain big sagebrush. This unit is suited to mechanical treatment. The main limitation is the very high hazard of water erosion. Nonmechanical treatment practices may be more suitable.

This unit is suited to nonirrigated crops. It is used for the production of wheat, barley, and a small amount of alfalfa hay. The unit is limited mainly by the very high hazard of water erosion and the short growing season. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are performed on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. Areas that have slopes of more than 12 percent may need to be seeded to permanent cover to reduce erosion. In some years the growing season is shorter than normal, which significantly reduces yields of crops on this unit.

This map unit is in capability subclass IVe.

73—Lanoak-Watercanyon-Rexburg complex, 12 to 20 percent slopes. This map unit is on dissected fan terraces. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 5,000 to 6,200 feet. The average annual precipitation is about 16 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 85 days.

This unit is about 50 percent Lanoak silt loam, about 20 percent Watercanyon silt loam, and about 15 percent Rexburg silt loam. The Lanoak soil is on north-facing, concave side slopes, the Watercanyon soil is on eroded ridges and convex, south-facing side slopes, and the Rexburg soil is on nearly plane slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Manila silt loam on north-facing side slopes and about 5 percent is Ririe silt loam on slightly eroded side slopes. The remaining 5 percent is small areas of Hondoho cobbly silt loam, Arbone gravelly silt loam, Greys silt loam, Camelback extremely stony silt loam, Moonlight silt loam, and soils that have slopes of less than 12 percent or more than 20 percent.

The Lanoak soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. Typically, the surface layer is dark grayish brown silt loam 22 inches thick. The subsoil is grayish brown and pale brown silt loam 22 inches thick. The substratum to a depth of 60 inches or more is light gray, calcareous silt loam.

Permeability of the Lanoak soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Watercanyon soil is very deep and well drained. It formed in loess and alluvium derived from loess. Typically, the surface layer is pale brown, calcareous silt loam 7 inches thick. The subsoil is pale brown, calcareous silt loam 9 inches thick. The substratum to a depth of 60 inches or more is pale brown, light gray, and very pale brown, calcareous silt loam.

Permeability of the Watercanyon soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Rexburg soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. Typically, the surface layer is grayish brown silt loam 10 inches thick. The subsoil is grayish brown silt loam 16 inches thick. The substratum to a depth of 60 inches or more is pale brown and light gray, calcareous silt loam.

Permeability of the Rexburg soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as rangeland.

This unit is suited to nonirrigated crops. It is used for the production of wheat and barley. The unit is limited mainly by the very high hazard of water erosion and the short growing season. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. In some years the growing season is shorter than normal, which significantly reduces yields of crops on this unit.

The Watercanyon and Rexburg soils are very susceptible to the formation of a tillage pan and other compacted layers, which reduce the permeability of the soil and restrict root penetration. Deep subsoiling in fall helps to break up the compacted layers.

This unit is well suited to use as rangeland. The potential natural plant community on the Lanoak and Rexburg soils is mainly mountain big sagebrush and bluebunch wheatgrass. The potential natural plant community on the Watercanyon soil is mainly Wyoming big sagebrush, bluebunch wheatgrass, and arrowleaf balsamroot. This unit is suited to the use of mechanical equipment such as rangeland plows and drills. The main limitation is the very high hazard of water erosion. Nonmechanical treatment practices may be more suitable.

This map unit is in capability subclass IVe.

74—Lava flows-McCarey-McCarey Variant complex, 1 to 8 percent slopes. This map unit is on basalt flows. The native vegetation is mainly shrubs and grasses. Elevation is about 4,500 to 4,800 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 90 days.

This unit is about 40 percent Lava flows, about 25 percent McCarey silt loam, and about 20 percent McCarey Variant extremely stony silt loam. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is soils that are similar to the McCarey soil but are very deep and are in concave pockets where water collects in spring and about 5 percent is areas of Lava flows that are characterized by vertical cliffs and channels. The remaining 5 percent is small areas of gravel deposits and soils that have slopes of more than 8 percent.

Lava flows consists of exposed basalt that is highly fractured and contains many crevices. The vegetation is mostly moss and lichens. Included are some crevices that support serviceberry, mountain big sagebrush, Rocky Mountain maple, currant, and antelope bitterbrush.

The McCarey soil is moderately deep and well drained. It formed in silty alluvium and in material weathered from basalt. Typically, the surface layer is dark grayish brown and grayish brown silt loam 12 inches thick. The subsoil is brown silt loam 5 inches thick. The substratum is light gray, calcareous silt loam 11 inches thick over basalt. Depth to bedrock ranges from 20 to 40 inches.

Permeability of the McCarey soil is moderately slow. Available water capacity is moderate. Effective rooting depth is 20 to 40 inches. Runoff is medium, and the hazard of water erosion is moderate.

The McCarey Variant soil is shallow and well drained. It formed in silty alluvium and in material weathered from basalt. Typically, the surface layer is brown extremely stony silt loam 8 inches thick. The subsoil is brown very stony silt loam 5 inches thick. Basalt is at a depth of 13 inches. Depth to bedrock ranges from 10 to 20 inches.

Permeability of the McCarey Variant soil is moderate. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is medium, and the hazard of water erosion is moderate.

This unit is used as rangeland. A small area in Indian Rocks State Park is used for recreation.

This unit is suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. The main limitations are the extremely stony surface of the McCarey Variant soil and the areas of Lava flows. This unit is poorly suited to the use of mechanical equipment such as rangeland plows and drills. Nonmechanical treatment practices may be more suitable.

This unit is poorly suited to recreational development. It is limited mainly by depth to bedrock, the extremely stony surface of the McCarey Variant soil, and the areas of Lava flows.

This map unit is in capability subclass VIIs.

75—Manila-Bancroft complex, 6 to 15 percent slopes. This map unit is on fan terraces and mountain foot slopes. The native vegetation is mainly shrubs and grasses. Elevation is about 5,000 to 6,000 feet. The average annual precipitation is about 16 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 75 days.

This unit is about 50 percent Manila silt loam and about 30 percent Bancroft silt loam. The Manila soil is on slightly concave side slopes, and the Bancroft soil is on slightly convex side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is Joes silt loam on eroded ridges, about 5 percent is Broadhead silt loam in concave areas on north-facing side slopes, and about 5 percent is Yago extremely stony silty clay loam on ridgetops and convex side slopes. The remaining 5 percent is small areas of Hades gravelly silt loam and Cedarhill very cobbly silt loam.

The Manila soil is very deep and well drained. It formed in alluvium derived from sedimentary and metasedimentary rock and loess. Typically, the upper part of the surface layer is grayish brown silt loam 7 inches thick and the lower part is grayish brown silty clay loam 8 inches thick. The subsoil is yellowish brown and dark brown silty clay and silty clay loam 33 inches thick. The substratum to a depth of 60 inches or more is pale brown and light yellowish brown, calcareous silt loam.

Permeability of the Manila soil is slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

The Bancroft soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. Typically, the surface layer is brown silt loam 7 inches thick. The upper 30 inches of the subsoil is brown and yellowish brown silty clay loam, and the lower 4 inches is light yellowish brown, calcareous silt loam. The substratum to a depth of 60 inches or more is pale brown and very pale brown, calcareous silt loam.

Permeability of the Bancroft soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as rangeland.

This unit is suited to nonirrigated crops. The main limitations are the high hazard of erosion and the short growing season. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are performed on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. Terraces reduce runoff and the risk of erosion and help to conserve moisture. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. In some years the growing season is shorter than normal, which significantly reduces yields of crops on this unit.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. The unit is well suited to the use of mechanical equipment such as rangeland plows and drills.

This map unit is in capability subclass IIIe.

76—Manila-Cedarhill, high precipitation complex, 20 to 30 percent slopes. This map unit is on mountain foot slopes and foothills. The native vegetation is mainly shrubs and grasses. Elevation is about 5,000 to 6,300 feet. The average annual precipitation is about 17 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 75 days.

This unit is about 40 percent Manila silt loam and about 40 percent Cedarhill very cobbly silt loam, high precipitation. The Manila soil is in concave areas on north- and east-facing side slopes, and the Cedarhill soil is on ridgetops and on convex, south- and west-facing side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is Ridgecrest extremely stony silt loam on ridgetops, about 5 percent is Hades gravelly silt loam, and about 5 percent is Bancroft silt loam. The remaining 5 percent is small areas of Ricrest gravelly silt loam, soils that have slopes of less than 20 percent or more than 30 percent, Trailcreek very fine sandy loam, and outcrops of volcanic ash.

The Manila soil is very deep and well drained. It formed in alluvium derived from sedimentary and metasedimentary rock and loess. Typically, the upper part of the surface layer is grayish brown silt loam 7 inches thick, and the lower part is grayish brown silty clay loam 8 inches thick. The subsoil is yellowish brown and dark brown silty clay and silty clay loam 33 inches thick. The substratum to a depth of 60 inches or more is pale brown and light yellowish brown, calcareous silt loam.

Permeability of the Manila soil is slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Cedarhill soil is very deep and well drained. It formed in alluvium and colluvium derived dominantly from limestone and related sedimentary and metasedimentary rock. Typically, the surface layer is brown, calcareous very cobbly silt loam 9 inches thick. The upper 19 inches of the underlying material is very pale brown and light yellowish brown, calcareous very cobbly silt loam, and the lower part to a depth of 60 inches or more is light yellowish brown, calcareous very cobbly loam.

Permeability of the Cedarhill soil is moderate. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as nonirrigated cropland and as rangeland.

This unit is poorly suited to nonirrigated crops. The main limitations are slope, the very high hazard of erosion, the short growing season, and the very cobbly surface of the Cedarhill soil. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. In some years the growing season is shorter than normal, which significantly reduces yields of crops on the unit. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. The steepness of slope and the very cobbly surface of the Cedarhill soil may affect the performance of machinery. Seeding to permanent cover may be needed to reduce erosion.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. Use of mechanical equipment such as rangeland plows and drills is limited because of the steepness of slope and the very cobbly surface of the Cedarhill soil. Nonmechanical treatment practices may be more suitable.

This map unit is in capability subclass VIe.

77—McDole-McDole Variant complex, 0 to 2 percent slopes. This map unit is on flood plains and low terraces. Elevation is about 4,400 to 4,500 feet. The average annual precipitation is about 10 inches, the average annual air temperature is about 47 degrees F, and the average frost-free period is about 120 days.

This unit is about 50 percent McDole silt loam and about 35 percent McDole Variant silt loam. The McDole soil is on the low terraces, and the McDole Variant soil is on the flood plains. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Hondoho gravelly silt loam near the mouth of drainageways and about 5 percent is McDole Variant soils that are protected from flooding. The remaining 5 percent is small areas of Broxon silt loam, organic soils that are wet for prolonged periods, and soils that have slopes of more than 2 percent.

The McDole soil is very deep and well drained. It formed in alluvium derived dominantly from loess. Typically, the surface layer is brown, calcareous silt loam 21 inches thick. The underlying material to a depth of 60 inches or more is pale brown, calcareous silt loam.

Permeability of the McDole soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight. This soil is subject to rare, brief periods of flooding late in winter and in spring.

The McDole Variant soil is very deep and well drained. It formed in alluvium derived dominantly from loess. Typically, the surface layer is grayish brown and dark grayish brown, calcareous silt loam 34 inches thick. The underlying material to a depth of 60 inches or more is pale brown, calcareous fine sandy loam.

Permeability of the McDole Variant soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very slow, and the hazard of water erosion is slight. This soil is subject to occasional, brief periods of flooding late in winter and in spring.

This unit is used mainly as irrigated cropland. It is also used for homesite and urban development.

This unit is well suited to irrigated crops. It has few limitations. Sprinkler irrigation is a suitable method of applying water. To avoid overirrigating and leaching of plant nutrients, applications of irrigation water should be adjusted to the available water capacity, the water intake rate, and the crop needs.

This unit is poorly suited to homesite and urban development. The main limitations are the hazard of flooding and the hazard of frost action. Protection from flooding can be provided by the use of dikes or channels to divert the water. The hazard of frost action is a limitation in maintaining roads, streets, driveways, and sidewalks.

This map unit is in capability subclasses IIc, irrigated, and VIc, nonirrigated.

78—Moonlight silt loam, 30 to 60 percent slopes. This very deep, well drained soil is on concave, north- and east-facing mountainsides. It formed in alluvium derived from loess and from sedimentary and metasedimentary rock. The native vegetation is mainly tall shrubs. Elevation is about 5,000 to 7,500 feet. The average annual precipitation is about 18 inches, the average annual air temperature is about 38 degrees F, and the average frost-free period is about 55 days.

Typically, an intermittent duff layer of leaves, twigs, and grasses about 2 inches thick is on the surface. The surface layer is very dark grayish brown, dark grayish brown, and dark brown silt loam 24 inches thick. The subsoil to a depth of 60 inches or more is brown and light yellowish brown silt loam.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 5 percent is Greys silt loam on slightly concave or plane, north- and east-facing side slopes, about 5 percent is Camelback gravelly silt loam on convex, south- and west-facing side slopes, about 5 percent is very deep soils in drainageways, and about 5 percent is Pavohroo silt loam on concave, north- and east-facing side slopes at the higher elevations. The remaining 5 percent is small areas of Rock outcrop and soils that have slopes of less than 30 percent.

Permeability of this Moonlight soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is suited to use as rangeland. The potential natural plant community on the unit is mainly Rocky Mountain maple, quaking aspen, common chokecherry, and mountain brome. Use of forage by livestock in some areas of this unit is limited by steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. In spring, cold soil temperatures limit early plant growth. Grazing should be delayed until the plants have achieved sufficient growth. Use of mechanical equipment such as rangeland plows and drills is not practical on the unit because of the steepness of slope and the very high hazard of water erosion.

This map unit is in capability subclass VIIe.

79—Moonlight-Camelback association, 30 to 60 percent slopes. This map unit is on mountainsides. The native vegetation is mainly small trees, shrubs, and grasses. Elevation is about 5,500 to 7,500 feet.

This unit is about 40 percent Moonlight silt loam and about 35 percent Camelback gravelly silt loam. The Moonlight soil is on concave, north- and east-facing side slopes near drainageways, and the Camelback soil is on convex and slightly concave side slopes that dominantly face south and west.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is very deep soils along drainageways, about 5 percent is Pavohroo silt loam in concave pockets, and about 5 percent is Rock outcrop and talus that can occur anywhere in the unit. The remaining 5 percent is small areas of Valmar very cobbly silt loam, Hades gravelly silt loam, Yago extremely stony silty clay loam, Lanoak silt loam, and soils that have slopes of less than 30 percent.

The Moonlight soil is very deep and well drained. It formed in alluvium derived from loess and from sedimentary and metasedimentary rock. The average annual precipitation is about 18 inches, the average annual air temperature is about 38 degrees F, and the average frost-free period is about 50 days. Typically, an intermittent duff layer of leaves, twigs, and grasses about 2 inches thick is on the surface. The surface layer is very dark grayish brown, dark grayish brown, and dark brown silt loam 24 inches thick. The subsoil to a depth of 60 inches or more is brown and light yellowish brown silt loam.

Permeability of the Moonlight soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Camelback soil is deep and well drained. It formed in alluvium, colluvium, and residuum derived dominantly from quartzite. The average annual precipitation is about 17 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 75 days. Typically, the surface layer is dark brown gravelly silt loam 21 inches thick. The subsoil is dark brown and yellowish brown extremely cobbly silt loam 21 inches thick. Quartzite bedrock is at a depth of 42 inches. Depth to bedrock ranges from 40 to 60 inches.

Permeability of the Camelback soil is moderate. Available water capacity is low. Effective rooting depth is 40 to 60 inches. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is well suited to use as rangeland. The potential natural plant community on the Moonlight soil is mainly Rocky Mountain maple, quaking aspen, common chokecherry, and mountain brome. The potential natural plant community on the Camelback soil is mainly bluebunch wheatgrass and mountain big sagebrush. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical because of the steepness of slope and the very high hazard of water erosion.

This map unit is in capability subclass VIIe.

80—Moonlight-Pavohroo complex, 30 to 60 percent slopes. This map unit is on mountainsides (fig. 8). The native vegetation is mainly trees, tall shrubs, and grasses. Elevation is about 5,500 to 7,500 feet. The average annual precipitation is about 22 inches, the average annual air temperature is about 39 degrees F, and the average frost-free period is about 50 days.

This unit is about 45 percent Moonlight silt loam and about 30 percent Pavohroo silt loam. The Moonlight soil is on concave, north- and east-facing side slopes, and the Pavohroo soil is in positions similar to those of the Moonlight soil but generally is at higher elevations. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is Camelback gravelly silt loam on convex, south- and west-facing side slopes and about 10 percent is very

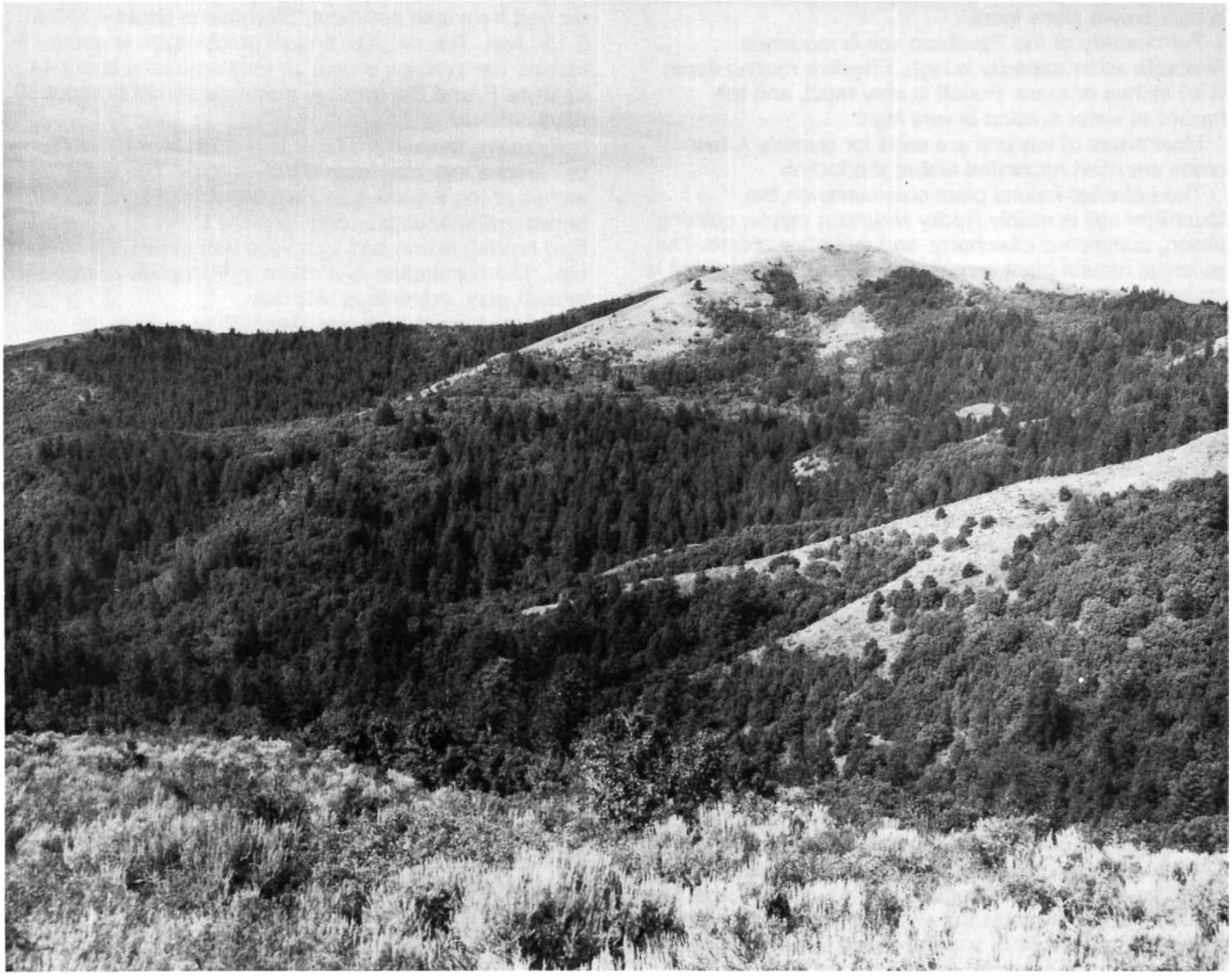

Figure 8.—Typical area of Moonlight-Pavohroo complex, 30 to 60 percent slopes. Valmar-Camelback-Hades complex, 30 to 60 percent slopes, is in foreground and on ridgetops.

deep soils along drainageways. The remaining 5 percent is small areas of Valmar very cobbly silt loam, Rock outcrop, and soils that have slopes of less than 30 percent.

The Moonlight soil is very deep and well drained. It formed in alluvium derived from loess and from sedimentary and metasedimentary rock. Typically, an intermittent duff layer of leaves, twigs, and grasses about 2 inches thick is on the surface. The surface layer is very dark grayish brown, dark grayish brown, and dark brown silt loam 24 inches thick. The subsoil to a depth of 60 inches or more is brown and light yellowish brown silt loam.

Permeability of the Moonlight soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Pavohroo soil is very deep and well drained. It formed in silty alluvium and colluvium derived from loess and various kinds of sedimentary and metasedimentary rock. Typically, an intermittent duff layer of needles, twigs, and leaves about 3 inches thick is on the surface. The surface layer is dark grayish brown silt loam 26 inches thick. The subsoil to a depth of 60 inches or more is pale brown stony loam.

Permeability of the Pavohroo soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

Most areas of this unit are used for grazing. A few areas are used for limited timber production.

The potential natural plant community on the Moonlight soil is mainly Rocky Mountain maple, quaking aspen, common chokecherry, and mountain brome. The potential natural plant community on the Pavohroo soil is mainly an overstory of Douglas-fir and an understory dominated by mountain snowberry and pine reedgrass.

The Moonlight and Pavohroo soils are well suited to the production of understory plants suitable for grazing. The Pavohroo soil can produce additional forage for livestock and wildlife for 15 to 30 years after the canopy is opened by logging, fire, or other disturbance. During this period annual production of understory ranges from 3,000 pounds of air-dry vegetation per acre to less than 200 pounds per acre as the canopy closes. In spring, cold soil temperatures limit early plant growth. Grazing should be delayed until the plants have achieved sufficient growth. Use of forage by livestock in some areas of this unit is limited because of the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical on the unit because of the steepness of slope, the trees and tall shrubs, and the very high hazard of water erosion.

The Pavohroo soil is suited to the production of Douglas-fir. On the basis of a 50-year site curve, the average site index for Douglas-fir is 65. Yield tables indicate that the maximum average annual growth is 85 cubic feet per acre of Douglas-fir at 40 years of age. The main concerns in producing and harvesting timber are the very high hazard of water erosion, the steepness of slope, and plant competition. Minimizing the risk of erosion is essential in harvesting timber. Excessive erosion is avoided by carefully planning the construction and maintenance of logging roads, skid trails, and landings. Cuts and fills should be seeded, and water bars and culverts should be installed. The steepness of slope limits the kinds of equipment that can be used for harvesting timber. If the overstory canopy is removed, the soil temperature increases. This may hinder the regeneration of timber. Competition from quaking aspen, shrubs, and grasses may also hinder regeneration. If the site is not adequately prepared, competition from undesirable plants can prevent or prolong natural or artificial reestablishment of trees.

This map unit is in capability subclass VIIe.

81—Oxford silty clay loam, 4 to 12 percent slopes. This very deep, moderately well drained soil is on lake terraces. It formed in lake sediment and in alluvium derived from lake sediment. Elevation is about 4,750 to 5,150 feet. The average annual precipitation is about 16 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 95 days.

Typically, the surface layer is reddish brown, calcareous silty clay loam 5 inches thick. The upper 21 inches of the subsoil is reddish brown and light reddish brown, calcareous silty clay, and the lower 21 inches is light reddish brown and light yellowish brown, calcareous clay. The substratum to a depth of 60 inches or more is pinkish gray, calcareous silty clay.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 10 percent is Banida silty clay loam in concave areas and on north-facing side slopes and about 10 percent is a soil that is similar to this Oxford soil but has a silty clay surface layer and is on eroded ridges and convex side slopes.

Permeability of this Oxford soil is very slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

This unit is used as nonirrigated cropland.

This unit is suited to nonirrigated crops. It is used for the production of wheat and barley. The unit is limited mainly by the high clay content of the surface layer and the high hazard of water erosion. The unit is difficult to till when it is dry, and it is subject to clodding and compaction if it is tilled when too moist. The period during which the soil moisture content is most suited to tillage is short. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. Terraces reduce runoff and the risk of erosion and help to conserve moisture. Erosion is also reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration.

This map unit is in capability subclass IIIe.

82—Oxford-Banida complex, 2 to 4 percent slopes. This map unit is on lake terraces. Elevation is about 4,750 to 5,150 feet. The average annual precipitation is about 16 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 95 days.

This unit is about 50 percent Oxford silty clay loam and about 30 percent Banida silty clay loam. The Oxford soil is on convex side slopes and ridges, and the Banida soil is on slightly concave side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 10 percent is soils that are similar to the Banida soil but are in drainageways and in very concave areas and about 5 percent is Oxford and Banida soils that have slopes of less than 2 percent or more than 4 percent. The remaining 5 percent is small areas of Trailcreek very fine sandy loam and volcanic ash outcrops.

The Oxford soil is very deep and moderately well drained. It formed in lake sediment and in alluvium derived from lake sediment. Typically, the surface layer is reddish brown, calcareous silty clay loam 5 inches thick. The upper 21 inches of the subsoil is reddish brown and light reddish brown, calcareous silty clay, and the lower 21 inches is light reddish brown and light yellowish brown, calcareous clay. The substratum to a depth of 60 inches or more is pinkish gray, calcareous silty clay.

Permeability of the Oxford soil is very slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is moderate.

The Banida soil is very deep and moderately well drained. It formed in lake sediment and in alluvium derived from lake sediment. Typically, the upper 6 inches of the surface layer is brown silty clay loam and the lower 3 inches is brown silty clay. The upper 13 inches of the subsoil is reddish brown silty clay, and the lower 18 inches is reddish brown and light brown, calcareous silty clay. The substratum to a depth of 60 inches or more is light brown, calcareous silty clay.

Permeability of the Banida soil is very slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is moderate.

This unit is used as nonirrigated cropland.

This unit is suited to nonirrigated crops. It is used for the production of wheat and barley. The unit is limited mainly by the high clay content of the surface layer and the hazard of water erosion. This unit is difficult to till when it is dry, and it is subject to clodding and compaction if it is tilled when too moist. The period during which the soil moisture content is most suited to tillage is short. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration.

This map unit is in capability subclass IIIe.

83—Pavohroo-Moonlight complex, 30 to 60 percent slopes. This map unit is on mountainsides. The native vegetation is mainly trees, tall shrubs, and grasses. Elevation is about 5,500 to 7,500 feet. The average annual precipitation is about 22 inches, the average annual air temperature is about 39 degrees F, and the average frost-free period is about 50 days.

This unit is about 55 percent Pavohroo silt loam and about 20 percent Moonlight silt loam. The Pavohroo soil is on concave, north- and east-facing side slopes near drainageways, and the Moonlight soil is in positions similar to those of the Pavohroo soil but is generally at lower elevations. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is Sedgway gravelly silt loam in slightly concave areas on north- and east-facing side slopes, about 5 percent is Valmar very cobbly silt loam on convex side slopes and ridgetops, and about 5 percent is Camelback gravelly silt loam on convex, south- and west-facing side slopes. The remaining 5 percent is small areas of Rock outcrop, soils that have slopes of less than 30 percent, and very deep soils along drainageways.

The Pavohroo soil is very deep and well drained. It formed in silty alluvium and colluvium derived from loess and various kinds of sedimentary and metasedimentary rock. Typically, an intermittent duff layer of needles, leaves, and twigs about 3 inches thick is on the surface. The surface layer is dark grayish brown silt loam 26 inches thick. The subsoil to a depth of 60 inches or more is pale brown stony loam.

Permeability of the Pavohroo soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Moonlight soil is very deep and well drained. It formed in loess and in alluvium derived from loess and sedimentary and metasedimentary rock. Typically, an intermittent duff layer of leaves, twigs, and grasses about 2 inches thick is on the surface. The surface layer is very dark grayish brown, dark grayish brown, and dark brown silt loam 24 inches thick. The subsoil to a depth of 60 inches or more is brown and light yellowish brown silt loam.

Permeability of the Moonlight soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

Most areas of this unit are used for grazing. A few areas are used for limited timber production.

The potential natural plant community on the Pavohroo soil is mainly an overstory of Douglas-fir and an understory dominated by mountain snowberry and pine reedgrass. The potential natural plant community on the Moonlight soil is mainly Rocky Mountain maple, quaking aspen, common chokecherry, and mountain brome.

The Pavohroo soil is well suited to the production of understory plants suitable for grazing. It can produce additional forage for livestock and wildlife for 15 to 30 years after the canopy is opened by logging, fire, or other disturbance. During this period annual production of understory ranges from 3,000 pounds of air-dry vegetation per acre to less than 200 pounds per acre as the canopy closes. The Moonlight soil is also well suited to the production of understory plants suitable for grazing.

In spring, cold soil temperatures limit early plant growth. Grazing should be delayed until the plants have achieved sufficient growth. Use of forage by livestock in some areas of this unit is limited because of the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical on the unit because of the steepness of slope, the trees and tall shrubs, and the very high hazard of water erosion.

The Pavohroo soil is suited to the production of Douglas-fir. On the basis of a 50-year site curve, the average site index for Douglas-fir is 65. Yield tables indicate that the maximum average annual growth is 85 cubic feet per acre of Douglas-fir at 40 years of age. The main concerns in producing and harvesting timber are the very high hazard of water erosion, the steepness of slope, and the hazard of plant competition. Minimizing the risk of erosion is essential in harvesting timber. Excessive erosion is avoided by carefully planning the construction and maintenance of logging roads, skid trails, and landings. Cuts and fills should be seeded, and water bars and culverts should be installed. The steepness of slope limits the kinds of equipment that can be used for harvesting timber. If the overstory canopy is removed, the soil temperature increases. This may hinder the regeneration of timber. Competition from quaking aspen, shrubs, and grasses may also hinder regeneration. If the site is not adequately prepared, competition from undesirable plants can prevent or prolong natural or artificial reestablishment of trees.

This map unit is in capability subclass VIIe.

84—Pavohroo-Sedgway-Toponce complex, 20 to 50 percent slopes. This map unit is on mountainsides. The native vegetation is mainly trees, shrubs, and grasses. Elevation is about 6,000 to 6,900 feet. The average annual precipitation is about 27 inches, the average annual air temperature is about 38 degrees F, and the average frost-free period is about 45 days.

This unit is about 30 percent Pavohroo silt loam, about 30 percent Sedgway gravelly silt loam, and about 20 percent Toponce silt loam. The Pavohroo soil is in slightly concave areas on north- and east-facing side slopes, the Sedgway soil is on slightly convex, north- and east-facing side slopes, and the Toponce soil is on the lower part of slightly convex to plane slopes that generally face south or west. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is Camelback gravelly silt loam on convex, south- and west-facing side slopes, about 5 percent is Enochville and Enochville Variant soils that have slopes of less than 3 percent and are along drainageways, and about 5 percent is Valmar very cobbly silt loam on convex, south- and west-facing side slopes and ridges. The remaining 5 percent is small areas of soils that are similar to the Toponce soils but are more than 35 percent rock fragments, Beaverdam silt loam, volcanic ash outcrops, Rock outcrop, and soils that have slopes of less than 20 percent.

The Pavohroo soil is very deep and well drained. It formed in silty alluvium and colluvium derived from loess and various kinds of sedimentary and metasedimentary rock. Slope is 20 to 50 percent. Typically, an intermittent duff layer of needles, leaves, and twigs about 3 inches thick is on the surface. The surface layer is dark grayish brown silt loam 26 inches thick. The subsoil to a depth of 60 inches or more is pale brown stony loam.

Permeability of the Pavohroo soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Sedgway soil is very deep and well drained. It formed in alluvium and colluvium derived from sedimentary and metasedimentary rock. Slope is 20 to 50 percent. Typically, an intermittent duff layer of needles, leaves, twigs, and grasses about 2 inches thick is on the surface. The upper 5 inches of the surface layer is very dark grayish brown gravelly silt loam, and the lower 7 inches is dark grayish brown very cobbly silt loam. The subsurface layer is pale brown very cobbly loam 9 inches thick. The upper 6 inches of the subsoil is 80 percent yellowish brown very cobbly clay loam and 20 percent pale brown very cobbly loam, and the lower part to a depth of 60 inches or more is yellowish brown very cobbly clay loam.

Permeability of the Sedgway soil is moderately slow. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Toponce soil is very deep and well drained. It formed in alluvium derived dominantly from sedimentary and metasedimentary rock. Slope is 20 to 30 percent. Typically, the upper 3 inches of the surface layer is dark grayish brown silt loam and the lower 11 inches is dark grayish brown silty clay loam. The subsoil to a depth of 60 inches or more is dark brown silty clay loam and brown silty clay and clay.

Permeability of the Toponce soil is slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as woodland and for grazing.

The potential natural plant community on the Pavohroo soil is mainly an overstory of Douglas-fir and an understory dominated by mountain snowberry and pine reedgrass. The potential natural plant community on the Sedgway soil is mainly an overstory of Douglas-fir and an understory dominated by pine reedgrass. The potential natural plant community on the Toponce soil is mainly an overstory of quaking aspen and an understory dominated by pine reedgrass.

The Pavohroo and Sedgway soils are well suited to the production of Douglas-fir. On the basis of a 50-year site curve, the average site index for Douglas-fir on these soils is 65. Yield tables indicate that the maximum average annual growth is 85 cubic feet per acre of Douglas-fir at 40 years of age. The main concerns in producing and harvesting timber are the very high hazard of water erosion, the steepness of slope, and the hazard of plant competition. Minimizing the risk of erosion is essential in harvesting timber. Excessive erosion is avoided by carefully planning the construction and maintenance of logging roads, skid trails, and landings. Cuts and fills should be seeded, and water bars and culverts should be installed. The steepness of slope limits the kinds of equipment that can be used for harvesting timber. If the overstory canopy is removed, the soil temperature increases. This may hinder the regeneration of timber. Competition from quaking aspen, shrubs, and grasses may also hinder regeneration. If the site is not adequately prepared, competition from undesirable plants can prevent or prolong natural or artificial reestablishment of trees.

The Toponce soil is suited to the production of quaking aspen. On the basis of an 80-year site curve, the average site index for quaking aspen is 65. Yield tables indicate that the maximum average annual growth is 36 cubic feet per acre of quaking aspen at 80 years of age. Most of the aspen harvested is used as firewood.

The Pavohroo soil is well suited to the production of understory plants suitable for grazing. It can produce additional forage for livestock and wildlife for 15 to 30 years after the canopy is opened by logging, fire, or other disturbance. During this period annual production of understory ranges from 3,000 pounds of air-dry vegetation per acre to less than 200 pounds per acre as the canopy closes. In spring, cold soil temperatures limit early plant growth. Grazing should be delayed until the plants have achieved sufficient growth. Use of forage by livestock in some areas of this soil is limited because of the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas.

The Sedgway soil is well suited to the production of understory plants suitable for grazing. It can produce additional forage for livestock and wildlife for 15 to 30 years after the canopy is opened by logging, fire, or other disturbance. During this period annual production of understory ranges from 3,000 pounds of air-dry vegetation per acre to less than 300 pounds per acre as the canopy closes. In spring, cold soil temperatures limit early plant growth. Grazing should be delayed until the plants have achieved sufficient growth. Use of forage by livestock in some areas of this soil is limited because of the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas.

The Toponce soil is well suited to the production of understory plants suitable for grazing. It can produce additional forage for livestock and wildlife for 10 to 20 years after the canopy is opened by logging, fire, or other disturbance. During this period annual production of understory ranges from 3,000 pounds of air-dry vegetation per acre to less than 300 pounds per acre as the canopy closes. In spring, cold soil temperatures limit early plant growth. Grazing should be delayed until the plants have achieved sufficient growth.

Livestock and wildlife concentrate in the included areas of Enochville and Enochville Variant soils in this unit. These areas provide access to water, and they produce the more palatable vegetation when not overused. If economically feasible, these areas should be managed using a deferred grazing system. It is likely that many of these areas will be considered sacrifice areas when developing an overall grazing plan.

This map unit is in capability subclass VIIe.

85—Pits, gravel. These are open excavations where the soil and part of the underlying sand, gravel, and cobbles have been removed. This unit generally is on terraces created by the ancient Bonneville Flood. The exposed underlying material supports very little if any vegetation. Some of these pits can be filled with water and used as fish ponds.

This map unit is in capability subclass VIIIs.

86—Pits, quarry. This map unit is primarily in the Inkom area. It is open pit excavations where the soil material has been removed and the underlying bedrock has been quarried. The limestone that has been removed is used primarily for making cement at the plant in Inkom. The quartzite that has been removed has been used as highway subgrade and for road surfacing. The material remaining is generally bedrock that supports very little if any vegetation.

This map unit is in capability subclass VIIIs.

87—Pocatello silt loam, 1 to 4 percent slopes. This very deep, well drained soil is on foothills and fan terraces. It formed in loess and in silty alluvium derived from loess. The native vegetation is mainly shrubs and grasses. Elevation is about 4,400 to 5,200 feet. The average annual precipitation is about 11 inches, the average annual air temperature is about 47 degrees F, and the average frost-free period is about 115 days.

Typically, the surface layer is grayish brown, calcareous silt loam 8 inches thick. The upper 32 inches of the underlying material is pale brown and very pale brown, calcareous silt loam, and the lower part to a depth of 60 inches or more is pale brown, calcareous silt loam.

Included areas make up about 10 percent of the total acreage of this unit. Of this, about 5 percent is Broncho cobbly loam on convex side slopes along drainageways. The remaining 5 percent is small areas of Ririe silt loam and soils that have slopes of less than 1 percent or more than 4 percent.

Permeability of this Pocatello soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is moderate. If this soil is irrigated, runoff is medium and the hazard of water erosion is high. The hazard of soil blowing is slight.

This unit is used for homesite and urban development, as irrigated and nonirrigated cropland, and as rangeland.

If this unit is used for homesite and urban development, the main limitations are the hazard of water erosion, the moderately alkaline and strongly alkaline underlying material, moderate permeability, and the hazard of frost action. The risk of erosion is increased if the soil is left exposed during site development. Erosion is controlled and maintenance costs reduced by stabilizing areas that have been disturbed. When excavations are made, lawns, shrubs, trees, and gardens may be difficult to establish if the underlying material is spread on the surface or is mixed with the surface layer. Topsoil can be stockpiled and used to reclaim areas disturbed during construction. If the density of housing is moderate to high, community sewage systems are needed. Frost action potential is a limitation in maintaining roads, streets, driveways, and sidewalks.

This unit is well suited to irrigated crops. It is used for the production of wheat, barley, potatoes, and alfalfa hay. The unit is limited mainly by the high hazard of erosion. Sprinkler irrigation is a suitable method of applying water. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion. Irrigation water needs to be applied at a rate that insures optimum production without increasing deep percolation, runoff, and erosion. Maintaining crop residue on or near the surface reduces runoff and helps to maintain soil tilth and organic matter content.

This unit is suited to nonirrigated crops. It is used for the production of wheat and barley. The unit is limited mainly by low precipitation and the moderate hazard of water erosion. Because precipitation is not sufficient for annual cropping, a cropping system that includes small grain and summer fallow is most suitable. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

This soil is well suited to use as rangeland. It has few limitations. The potential natural plant community on the unit is mainly Wyoming big sagebrush, bluebunch wheatgrass, Thurber needlegrass, and arrowleaf balsamroot. Livestock watering facilities need to be developed or improved for summer and fall use of this unit. The unit is well suited to the use of mechanical equipment such as rangeland plows and drills. The suitability of the unit for rangeland seeding is good.

This map unit is in capability subclasses IIIe, irrigated, and IVe, nonirrigated.

88—Pocatello silt loam, 4 to 8 percent slopes. This very deep, well drained soil is on foothills and fan terraces. It formed in loess and in silty alluvium derived from loess. The native vegetation is mainly shrubs and grasses. Elevation is about 4,400 to 5,200 feet. The average annual precipitation is about 11 inches, the average annual air temperature is about 47 degrees F, and the average frost-free period is about 115 days.

Typically, the surface layer is grayish brown, calcareous silt loam 8 inches thick. The upper 32 inches of the underlying material is pale brown and very pale brown, calcareous silt loam, and the lower part to a depth of 60 inches or more is pale brown, calcareous silt loam.

Included areas make up about 10 percent of the total acreage of this unit. Of this, about 5 percent is Broncho cobbly loam on convex side slopes along drainageways. The remaining 5 percent is small areas of Ririe silt loam and soils that have slopes of less than 4 percent or more than 8 percent.

Permeability of this Pocatello soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is moderate. If this soil is irrigated, runoff is rapid and the hazard of water erosion is high. The hazard of soil blowing is slight.

This unit is used for homesite and urban development, as irrigated and nonirrigated cropland, and as rangeland.

If this unit is used for homesite and urban development, the main limitations are the hazard of water erosion, the moderately alkaline and strongly alkaline underlying material, moderate permeability, and the hazard of frost action. The risk of erosion is increased if the soil is left exposed during site development. Erosion is controlled and maintenance costs reduced by stabilizing areas that have been disturbed. When excavations are made, lawns, shrubs, trees, and gardens may be difficult to establish if the underlying material is spread on the surface or is mixed with the surface layer. Topsoil can be stockpiled and used to reclaim areas disturbed during construction. If the density of housing is moderate to high, community sewage systems are needed. Frost action potential is a limitation in maintaining roads, streets, driveways, and sidewalks.

This unit is suited to irrigated crops. It is used for the production of wheat, barley, potatoes, and alfalfa hay. The unit is limited mainly by the high hazard of erosion. Sprinkler irrigation is a suitable method of applying water. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion. Irrigation water needs to be applied at a rate that insures optimum production without increasing deep percolation, runoff, and erosion. Erosion is reduced and fertility maintained by using a suitable cropping system, crop residue management, minimum tillage, and proper fertilization. All tillage should be on the contour or across the slope.

This unit is suited to nonirrigated crops. It is used for the production of wheat and barley. The unit is limited mainly by low precipitation and the moderate hazard of water erosion. Because precipitation is not sufficient for annual cropping, a cropping system that includes small grain and summer fallow is most suitable. Practices that can be used to control erosion include seeding early in fall, stubble mulch tillage, and construction of terraces, diversions, and grassed waterways. Terraces reduce runoff and the risk of erosion and help to conserve moisture. Special designs for terraces and diversions are needed because of the shallow depth to moderately alkaline and strongly alkaline soil material. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly Wyoming big sagebrush, bluebunch wheatgrass, Thurber needlegrass, and arrowleaf balsamroot. Livestock watering facilities need to be developed or improved for summer and fall use of this unit. This unit is well suited to the use of mechanical equipment such as rangeland plows and drills. It is well suited to rangeland seeding.

This map unit is in capability subclass IVe, irrigated and nonirrigated.

89—Pocatello silt loam, 8 to 12 percent slopes. This very deep, well drained soil is on foothills and fan terraces. It formed in loess and in silty alluvium derived from loess. The native vegetation is mainly shrubs and grasses. Elevation is about 4,400 to 5,200 feet. The average annual precipitation is about 11 inches, the average annual air temperature is about 47 degrees F, and the average frost-free period is about 115 days.

Typically, the surface layer is grayish brown, calcareous silt loam 8 inches thick. The upper 32 inches of the underlying material is pale brown and very pale brown, calcareous silt loam, and the lower part to a depth of 60 inches or more is pale brown, calcareous silt loam.

Included areas make up about 10 percent of the total acreage of this unit. Of this, about 5 percent is Broncho cobbly loam on convex side slopes along drainageways. The remaining 5 percent is small areas of Ririe silt loam and soils that have slopes of less than 8 percent or more than 12 percent.

Permeability of this Pocatello soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high. If this soil is irrigated, runoff is very rapid and the hazard of water erosion is very high. The hazard of soil blowing is slight.

This unit is used mainly for homesite and urban development. It is also used as irrigated and nonirrigated cropland and as rangeland.

Population growth has resulted in increased construction of homes on this unit. The main limitations are the hazard of water erosion, slope, the moderately alkaline and strongly alkaline underlying material, the hazard of frost action, and moderate permeability. The risk of erosion is increased if the soil is left exposed during site development. Erosion is controlled and maintenance costs reduced by stabilizing areas that have been disturbed. Access roads should be designed to provide adequate cut-slope grade, and drains are needed to control surface runoff and keep soil losses to a minimum. When excavations are made, lawns, shrubs, trees, and gardens may be difficult to establish if the underlying material is spread on the surface or is mixed with the surface layer. Topsoil can be stockpiled and used to reclaim areas disturbed during construction. Frost action potential is a limitation in maintaining roads, streets, driveways, and sidewalks. If the density of housing is moderate to high, community sewage systems are needed.

This unit is suited to irrigated crops. It is used for the production of wheat, barley, potatoes, and alfalfa hay. The unit is limited mainly by the very high hazard of erosion. Sprinkler irrigation is a suitable method of applying water. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion. Irrigation water needs to be applied at a rate that insures optimum production without increasing deep percolation, runoff, and erosion. Erosion is reduced and fertility maintained by using a suitable cropping system, crop residue management, minimum tillage, and proper fertilization. All tillage should be on the contour or across the slope.

This unit is suited to nonirrigated crops. It is used for the production of wheat and barley. The unit is limited mainly by low precipitation and the high hazard of erosion. Because precipitation is not sufficient for annual cropping, a cropping system that includes small grain and summer fallow is most suitable. Practices that can be used to control erosion include seeding early in fall, stubble mulch tillage, and construction of terraces, diversions, and grassed waterways. Terraces reduce runoff and the risk of erosion and help to conserve moisture. Special designs for terraces and diversions are needed because of the shallow depth to moderately alkaline and strongly alkaline soil material. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly Wyoming big sagebrush, bluebunch wheatgrass, Thurber needlegrass, and arrowleaf balsamroot. Livestock watering facilities need to be developed or improved for summer and fall use of this unit. The suitability of this unit for rangeland seeding is good.

This map unit is in capability subclasses VIe, irrigated, and IVe, nonirrigated.

90—Pocatello silt loam, 12 to 20 percent slopes. This very deep, well drained soil is on foothills and fan terraces. It formed in loess and in silty alluvium derived from loess. The native vegetation is mainly shrubs and grasses. Elevation is about 4,400 to 5,200 feet. The average annual precipitation is about 11 inches, the average annual air temperature is about 47 degrees F, and the average frost-free period is about 115 days.

Typically, the surface layer is grayish brown, calcareous silt loam 8 inches thick. The upper 32 inches of the underlying material is pale brown and very pale brown, calcareous silt loam, and the lower part to a depth of 60 inches or more is pale brown, calcareous silt loam.

Included areas make up about 10 percent of the total acreage of this unit. Of this, about 5 percent is Broncho cobbly loam on convex side slopes along drainageways. The remaining 5 percent is small areas of Ririe silt loam and soils that have slopes of less than 12 percent or more than 20 percent.

Permeability of this Pocatello soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high. The hazard of soil blowing is slight.

Most areas of this unit are used as rangeland. A few areas are used as nonirrigated cropland and for homesite development.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly Wyoming big sagebrush, bluebunch wheatgrass, Thurber needlegrass, and arrowleaf balsamroot. Livestock watering facilities need to be developed or improved for summer and fall use of this unit. The unit is not well suited to mechanical treatment. The main limitation is the hazard of water erosion. Nonmechanical treatment practices may be more suitable.

This unit is poorly suited to use as nonirrigated cropland. It is used for the production of wheat and barley. The unit is limited mainly by low precipitation and the very high hazard of erosion. Because precipitation is not sufficient for annual cropping, a cropping system that includes small grain and summer fallow is most suitable. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration.

This unit is suited to homesite development. The main limitations are slope, the hazard of water erosion, the moderately alkaline and strongly alkaline underlying material, and the hazard of frost action. Access roads should be designed to provide adequate cut-slope grade, and drains are needed to control surface runoff and keep soil losses to a minimum. Preserving the existing plant cover during construction helps to control erosion. The risk of erosion is increased if the soil is left exposed during site development. Erosion is controlled and maintenance costs reduced by stabilizing areas that have been disturbed. When excavations are made, lawns, shrubs, trees, and gardens may be difficult to establish if the underlying material is spread on the surface or is mixed with the surface layer. Topsoil can be stockpiled and used to reclaim areas disturbed during construction. Frost action potential is a limitation in maintaining roads, streets, driveways, and sidewalks. Slope is a concern in installing septic tank absorption fields.

This map unit is in capability subclass IVe.

91—Pocatello silt loam, 20 to 30 percent slopes. This very deep, well drained soil is on foothills and fan terraces. It formed in loess and in silty alluvium derived from loess. The native vegetation is mainly shrubs and grasses. Elevation is about 4,400 to 5,200 feet. The average annual precipitation is about 11 inches, the average annual air temperature is about 47 degrees F, and the average frost-free period is about 115 days.

Typically, the surface layer is grayish brown, calcareous silt loam 8 inches thick. The upper 32 inches of the underlying material is pale brown and very pale brown, calcareous silt loam, and the lower part to a depth of 60 inches or more is pale brown, calcareous silt loam.

Included areas make up about 10 percent of the total acreage of this unit. Of this, about 5 percent is Broncho cobbly loam on convex side slopes along drainageways. The remaining 5 percent is small areas of Ririe silt loam and soils that have slopes of less than 20 percent or more than 30 percent.

Permeability of this Pocatello soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high. The hazard of soil blowing is slight.

Most areas of this unit are used as rangeland. A few areas are used for homesite development.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly Wyoming big sagebrush, bluebunch wheatgrass, Thurber needlegrass, and arrowleaf balsamroot. Livestock watering facilities need to be developed or improved for summer and fall use of this unit. Use of mechanical equipment such as rangeland plows and drills is not practical because of the steepness of slope and the very high hazard of erosion. Nonmechanical treatment practices may be more suitable.

This unit is poorly suited to homesite development. It is limited mainly by the hazard of water erosion and slope. Excavation for roads and buildings increases the risk of erosion. Slope is a concern in installing septic tank absorption fields. Effluent from septic tank absorption fields can surface in downslope areas and thus create a hazard to health. Access roads should be designed to provide adequate cut-slope grade, and drains are needed to control surface runoff and keep soil losses to a minimum.

This map unit is in capability subclass VIe.

92—Portino-Thornock complex, 0 to 2 percent slopes. This map unit is on basalt flows. The vegetation is mainly shrubs and grasses. Elevation is about 4,500 to 4,600 feet. The average annual precipitation is about 12 inches, the average annual air temperature is about 47 degrees F, and the average frost-free period is about 120 days.

This unit is about 45 percent Portino silt loam and about 30 percent Thornock stony silt loam. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is Lava flows and about 10 percent is Pocatello silt loam. The remaining 5 percent is small areas of Broxon silt loam and soils that have slopes of more than 2 percent.

The Portino soil is moderately deep and well drained. It formed in loess, in silty alluvium derived from loess, and in material weathered from basalt. Typically, the surface layer is grayish brown, calcareous silt loam 3 inches thick. The subsoil is pale brown, calcareous silt loam 6 inches thick. The substratum is very pale brown and pale brown, calcareous silt loam 20 inches thick over basalt. Depth to bedrock ranges from 20 to 40 inches.

Permeability of the Portino soil is moderate. Available water capacity is low. Effective rooting depth is 20 to 40 inches. Runoff is slow, and the hazard of water erosion is slight.

The Thornock soil is shallow and well drained. It formed in loess, in silty alluvium derived from loess, and in material weathered from basalt. Typically, the upper 2 inches of the surface layer is grayish brown, calcareous stony silt loam, and the lower 5 inches is light brownish gray, calcareous silt loam. The underlying material to a depth of 14 inches is pale brown, calcareous silt loam. Basalt is at a depth of 14 inches. Depth to bedrock ranges from 10 to 20 inches.

Permeability of the Thornock soil is moderate. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is slow, and the hazard of water erosion is slight.

Most areas of this unit are used as rangeland. A few areas are used for homesite and urban development.

This unit is suited to use as rangeland. The potential natural plant community on the unit is mainly Wyoming big sagebrush, bluebunch wheatgrass, and Thurber needlegrass. Use of mechanical equipment such as rangeland plows and drills is not practical in most areas of this unit because of the areas of Rock outcrop and the stony surface of the Thornock soil.

This unit is poorly suited to homesite and urban development. The main limitations are the included areas of Lava flows and the depth to bedrock. The limited depth to bedrock interferes with excavation for installing utilities and does not provide adequate soil depth for septic tank absorption fields and basements.

This map unit is in capability subclass VIIs.

93—Rexburg silt loam, 1 to 4 percent slopes. This very deep, well drained soil is on foothills and fan terraces. It formed in loess and in silty alluvium derived from loess. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 5,000 to 6,000 feet. The average annual precipitation is about 15 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

Typically, the surface layer is grayish brown silt loam 10 inches thick. The subsoil is grayish brown silt loam 16 inches thick. The substratum to a depth of 60 inches or more is pale brown and light gray, calcareous silt loam.

Included areas make up about 10 percent of the total acreage of this unit. Of this, about 5 percent is Watercanyon silt loam on south- and west-facing side slopes. The remaining 5 percent is small areas of Hondoho gravelly silt loam on side slopes near drainageways and Rexburg soils that have slopes of more than 4 percent.

Permeability of this Rexburg soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. In both irrigated and nonirrigated areas, runoff is medium and the hazard of water erosion is moderate.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as irrigated cropland and as rangeland.

This unit is well suited to nonirrigated crops. It is used for the production of wheat, barley, and a small amount of alfalfa hay. The unit is limited mainly by the hazard of water erosion. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope (fig. 9). Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

This unit is well suited to irrigated crops. It is used for the production of wheat, barley, alfalfa hay, and potatoes. The unit is limited mainly by the hazard of water erosion. Sprinkler irrigation is a suitable method of applying water. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion. Irrigation water needs to be applied at a rate that insures optimum production without increasing deep percolation, runoff, and erosion.

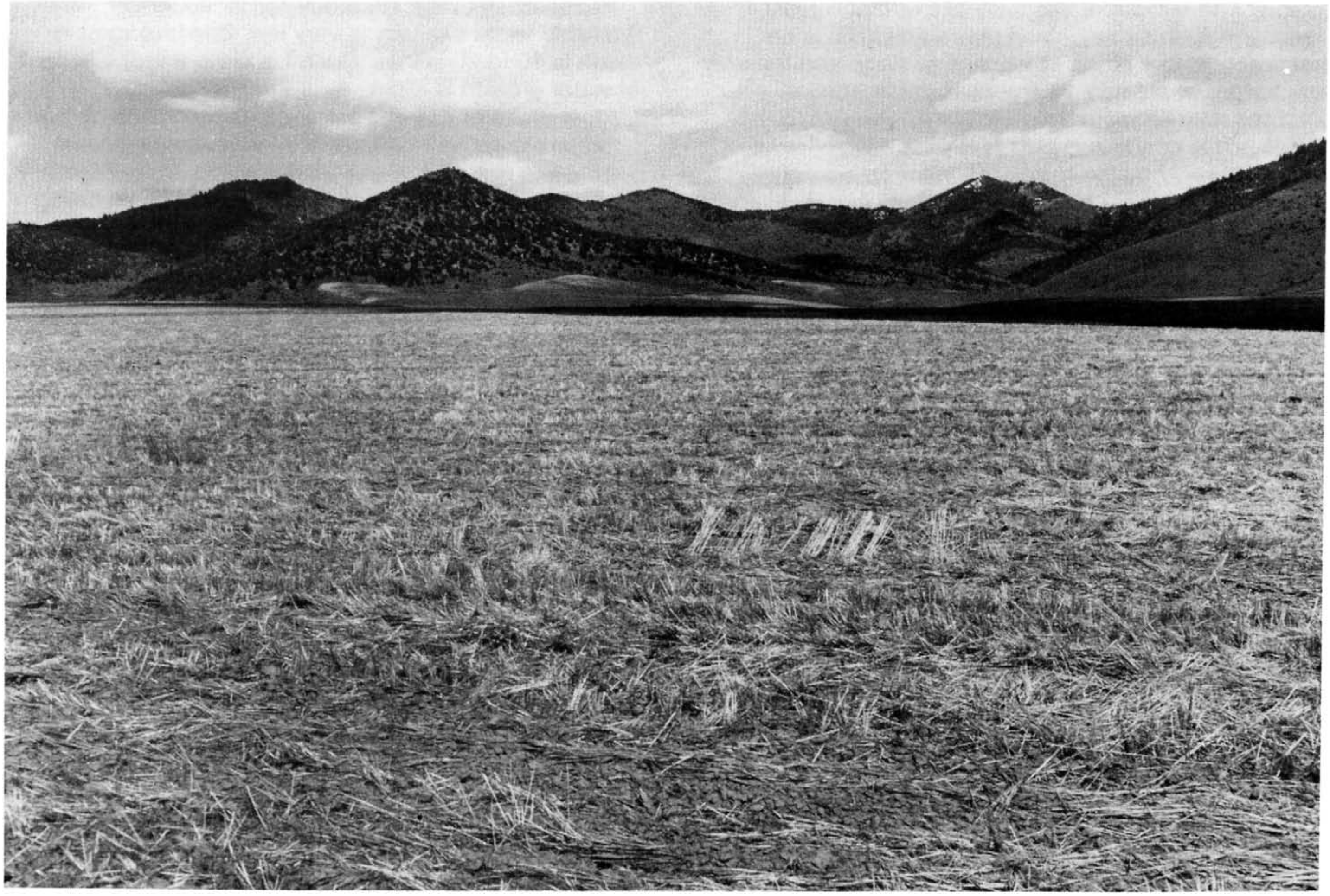

Figure 9.—Stubble mulch tillage on Rexburg silt loam, I to 4 percent slopes.

Maintaining crop residue on or near the surface reduces runoff and helps to maintain soil tilth and organic matter content. All tillage should be on the contour or across the slope.

The unit is very susceptible to the formation of a tillage pan and other compacted layers, which reduce the permeability of the soil and restrict root penetration. Deep subsoiling in fall helps to break up the compacted layers.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. The unit is well suited to rangeland seeding.

This map unit is in capability subclasses IIIe, irrigated, and IIIc, nonirrigated.

94—Rexburg silt loam, 4 to 12 percent slopes. This very deep, well drained soil is on foothills and fan terraces. It formed in loess and in silty alluvium derived from loess. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 5,000 to 6,000 feet. The average annual precipitation is about 15 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

Typically, the surface layer is grayish brown silt loam 10 inches thick. The subsoil is grayish brown silt loam 16 inches thick. The substratum to a depth of 60 inches or more is pale brown and light gray, calcareous silt loam.

Included areas make up about 10 percent of the total acreage of this unit. Of this, about 5 percent is Watercanyon silt loam on south- and west-facing side slopes. The remaining 5 percent is small areas of Hondoho gravelly silt loam on side slopes near drainageways and Rexburg soils that have slopes of less than 4 percent or more than 12 percent.

Permeability of this Rexburg soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high. If this soil is irrigated, runoff is very rapid and the hazard of water erosion is very high.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as irrigated cropland and as rangeland.

This unit is well suited to nonirrigated crops. It is used for the production of wheat, barley, and a small amount of alfalfa hay. The unit is limited mainly by the high hazard of water erosion. Terraces reduce runoff and the risk of erosion and help to conserve moisture. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

This unit is suited to irrigated crops. It is used for the production of wheat, barley, alfalfa hay, and potatoes. The unit is limited mainly by the very high hazard of water erosion. Sprinkler irrigation is a suitable method of applying water. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion. Irrigation water needs to be applied at a rate that insures optimum production without increasing deep percolation, runoff, and erosion. Maintaining crop residue on or near the surface reduces runoff and helps to maintain soil tilth and organic matter content. All tillage should be on the contour or across the slope.

The soil in this unit is very susceptible to the formation of a tillage pan and other compacted layers, which reduce the permeability of the soil and restrict root penetration. Deep subsoiling in fall helps to break up the compacted layers.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. The unit is suited to the use of mechanical equipment such as rangeland plows and drills.

This map unit is in capability subclasses IVe, irrigated, and IIe, nonirrigated.

95—Rexburg silt loam, 12 to 20 percent slopes. This very deep, well drained soil is on foothills and fan terraces. It formed in loess and in silty alluvium derived from loess. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 5,000 to 6,000 feet. The average annual precipitation is about 15 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

Typically, the surface layer is grayish brown silt loam 10 inches thick. The subsoil is grayish brown silt loam 16 inches thick. The substratum to a depth of 60 inches or more is pale brown and light gray, calcareous silt loam.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Watercanyon silt loam on south- and west-facing side slopes and about 5 percent is Hondoho gravelly silt loam on convex, north- and east-facing side slopes and along drainageways. The remaining 5 percent is small areas of Coalbank very fine sandy loam and soils that have slopes of less than 12 percent or more than 20 percent.

Permeability of this Rexburg soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as rangeland.

This unit is suited to nonirrigated crops. It is used for the production of wheat, barley, and a small amount of alfalfa hay. The unit is limited mainly by the high hazard of water erosion. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

The unit is very susceptible to the formation of a tillage pan and other compacted layers, which reduce the permeability of the soil and restrict root penetration. Deep subsoiling in fall helps to break up the compacted layers.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. This unit is suited to the use of mechanical equipment such as rangeland plows and drills. The main limitation is the very high hazard of water erosion. Nonmechanical treatment practices may be more suitable.

This map unit is in capability subclass IVe.

96—Rexburg silt loam, 20 to 40 percent slopes. This very deep, well drained soil is on foothills and fan terraces. It formed in loess and in silty alluvium derived from loess. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 5,000 to 6,000 feet. The average annual precipitation is about 15 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

Typically, the surface layer is grayish brown silt loam 10 inches thick. The subsoil is grayish brown silt loam 16 inches thick. The substratum to a depth of 60 inches or more is pale brown and light gray, calcareous silt loam.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Hondoho cobbly silt loam on convex ridges and along drainageways and about 5 percent is Watercanyon silt loam on south-facing side slopes and ridgetops. The remaining 5 percent is small areas of Coalbank very fine sandy loam, Moonlight silt loam, Camelback gravelly silt loam, and soils that have slopes of less than 20 percent or more than 40 percent.

Permeability of this Rexburg soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

Most areas of this unit are used as rangeland. A few areas are used as nonirrigated cropland.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. Use of mechanical equipment such as rangeland plows and drills is not practical because of the steepness of slope and the very high hazard of water erosion. Nonmechanical treatment practices may be more suitable.

This unit is poorly suited to nonirrigated crops. It is used for the production of wheat, barley, and a small amount of alfalfa hay. The unit is limited mainly by the steepness of slope and the very high hazard of water erosion. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. Seeding to permanent cover may be needed to reduce erosion.

This unit is very susceptible to the formation of a tillage pan and other compacted layers, which reduce the permeability of the soil and restrict root penetration. Deep subsoiling in fall helps to break up the compacted layers.

This map unit is in capability subclass VIe.

97—Ririe silt loam, 1 to 4 percent slopes. This very deep, well drained soil is on foothills and fan terraces. It formed in loess and in silty alluvium derived from loess. The vegetation in areas not cultivated is mainly shrubs and grass. Elevation is about 4,800 to 6,000 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

Typically, the surface layer is brown silt loam 12 inches thick. The underlying material to a depth of 60 inches or more is pale brown and very pale brown, calcareous silt loam.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Watercanyon silt loam on south- and west-facing side slopes and about 5 percent is Hondoho gravelly silt loam on convex side slopes along drainageways. The remaining 5 percent is small areas of Joevar silt loam and Ririe soils that have slopes of less than 1 percent or more than 4 percent.

Permeability of this Ririe soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. In both irrigated and nonirrigated areas, runoff is medium and the hazard of water erosion is moderate.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as irrigated cropland and as rangeland.

This unit is well suited to nonirrigated crops. It is used for the production of wheat, barley, and a small amount of alfalfa hay. The unit is limited mainly by low precipitation and the hazard of water erosion. Because precipitation is marginal for annual cropping, the cropping system commonly includes small grain and summer fallow. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

This unit is well suited to irrigated crops. It is used for the production of wheat, barley, alfalfa hay, and potatoes. The unit is limited mainly by the hazard of water erosion. Sprinkler irrigation is a suitable method of applying water. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion. Irrigation water needs to be applied at a rate that insures optimum production without increasing deep percolation, runoff, and erosion. Erosion is reduced and fertility maintained by using a suitable cropping system, crop residue management, minimum tillage, and proper fertilization.

This unit is very susceptible to the formation of a tillage pan and other compacted layers, which reduce the permeability of the soil and restrict root penetration. Deep subsoiling in fall helps to break up the compacted layers.

The unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. The unit is well suited to the use of mechanical equipment such as rangeland plows and drills.

This map unit is in capability subclasses IIIe, irrigated, and IIIc, nonirrigated.

98—Ririe silt loam, 4 to 12 percent slopes. This very deep, well drained soil is on foothills and fan terraces. It formed in loess and in silty alluvium derived from loess. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,800 to 6,000 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

Typically, the surface layer is brown silt loam 12 inches thick. The underlying material to a depth of 60 inches or more is pale brown and very pale brown, calcareous silt loam.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Watercanyon silt loam on south- and west-facing side slopes and about 5 percent is Hondoho gravelly silt loam on convex side slopes along drainageways. The remaining 5 percent is small areas of Joevar silt loam and Ririe soils that have slopes of less than 4 percent or more than 12 percent.

Permeability of this Ririe soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high. If this soil is irrigated, runoff is very rapid and the hazard of water erosion is very high.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as irrigated cropland and as rangeland.

This unit is well suited to nonirrigated crops. It is used for the production of wheat, barley, and a small amount of alfalfa hay. The unit is limited mainly by low precipitation and the high hazard of water erosion. Because precipitation is marginal for annual cropping, the cropping system commonly includes small grain and summer fallow. Terraces reduce runoff and the risk of erosion and help to conserve moisture. Special designs for terraces and diversions are needed because of the shallow depth to moderately alkaline and strongly alkaline soil material. Bringing this material to the surface reduces the production of crops. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

This unit is suited to irrigated crops. It is used for the production of wheat, barley, and small amounts of alfalfa hay and potatoes. The unit is limited mainly by the very high hazard of erosion. Sprinkler irrigation is a suitable method of applying water. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion. Irrigation water needs to be applied at a rate that insures optimum production without increasing deep percolation, runoff, and erosion. Erosion is reduced and fertility maintained by using a suitable cropping system, crop residue management, minimum tillage, and proper fertilization. All tillage should be on the contour or across the slope.

This unit is very susceptible to the formation of a tillage pan and other compacted layers, which reduce the permeability of the soil and restrict root penetration. Deep subsoiling in fall helps to break up the compacted layers.

This unit is well suited to use as rangeland. It has few limitations. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. The unit is suited to the use of mechanical equipment such as rangeland plows and drills.

This map unit is in capability subclasses IVe, irrigated, and IIIe, nonirrigated.

99—Ririe silt loam, 12 to 20 percent slopes. This very deep, well drained soil is on foothills and fan terraces. It formed in loess and in silty alluvium derived from loess. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,800 to 6,000 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

Typically, the surface layer is brown silt loam 12 inches thick. The underlying material to a depth of 60 inches or more is pale brown and very pale brown, calcareous silt loam.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Watercanyon silt loam on south- and west-facing side slopes and about 5 percent is Hondoho gravelly silt loam on convex side slopes along drainageways. The remaining 5 percent is small areas of Joevar silt loam and Ririe soils that have slopes of less than 12 percent or more than 20 percent.

Permeability of this Ririe soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as rangeland.

This unit is suited to nonirrigated crops. It is used for the production of wheat, barley, and a small amount of alfalfa hay. The unit is limited mainly by low precipitation and the very high hazard of water erosion. Because precipitation is marginal for annual cropping, the cropping system commonly includes small grain and summer fallow. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

This unit is very susceptible to the formation of a tillage pan and other compacted layers, which reduce the permeability of the soil and restrict root penetration. Deep subsoiling in fall helps to break up the compacted layers.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush and bluebunch wheatgrass. This unit is suited to the use of mechanical equipment such as rangeland plows and drills. The main limitation is the very high hazard of water erosion. Nonmechanical treatment practices may be more suitable.

This map unit is in capability subclass IVe.

100—Ririe-Watercanyon complex, 4 to 12 percent slopes. This map unit is on foothills and fan terraces. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,800 to 6,000 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

This unit is about 60 percent Ririe silt loam and about 30 percent Watercanyon silt loam. The Ririe soil is on slightly concave or plane, north- and east-facing side slopes, and the Watercanyon soil is on ridgetops and slightly convex, south- and west-facing side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 10 percent of the total acreage of this unit. Of this, about 5 percent is Hondoho cobbly silt loam on convex side slopes along drainageways. The remaining 5 percent is small areas of Joevar silt loam, Inkom silt loam, and soils that have slopes of less than 4 percent or more than 12 percent.

The Ririe soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. Typically, the surface layer is brown silt loam 12 inches thick. The underlying material to a depth of 60 inches or more is pale brown and very pale brown, calcareous silt loam.

Permeability of the Ririe soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

The Watercanyon soil is very deep and well drained. It formed in loess and in alluvium derived from loess. Typically, the surface layer is pale brown calcareous silt loam 7 inches thick. The subsoil is pale brown, calcareous silt loam 9 inches thick. The substratum to a depth of 60 inches or more is pale brown, light gray, and very pale brown, calcareous silt loam.

Permeability of the Watercanyon soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is rapid, and the hazard of water erosion is high.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as rangeland.

This unit is well suited to nonirrigated crops. It is used for the production of wheat and barley (fig. 10). The unit is limited mainly by low precipitation and the high hazard of water erosion. Because precipitation is marginal for annual cropping, the cropping system commonly includes small grain and summer fallow. Terraces reduce runoff and the risk of erosion and help to conserve moisture. Special designs for terraces and diversions are needed because of the shallow depth to moderately alkaline and strongly alkaline soil material. Bringing this material to the surface also reduces the production of crops. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

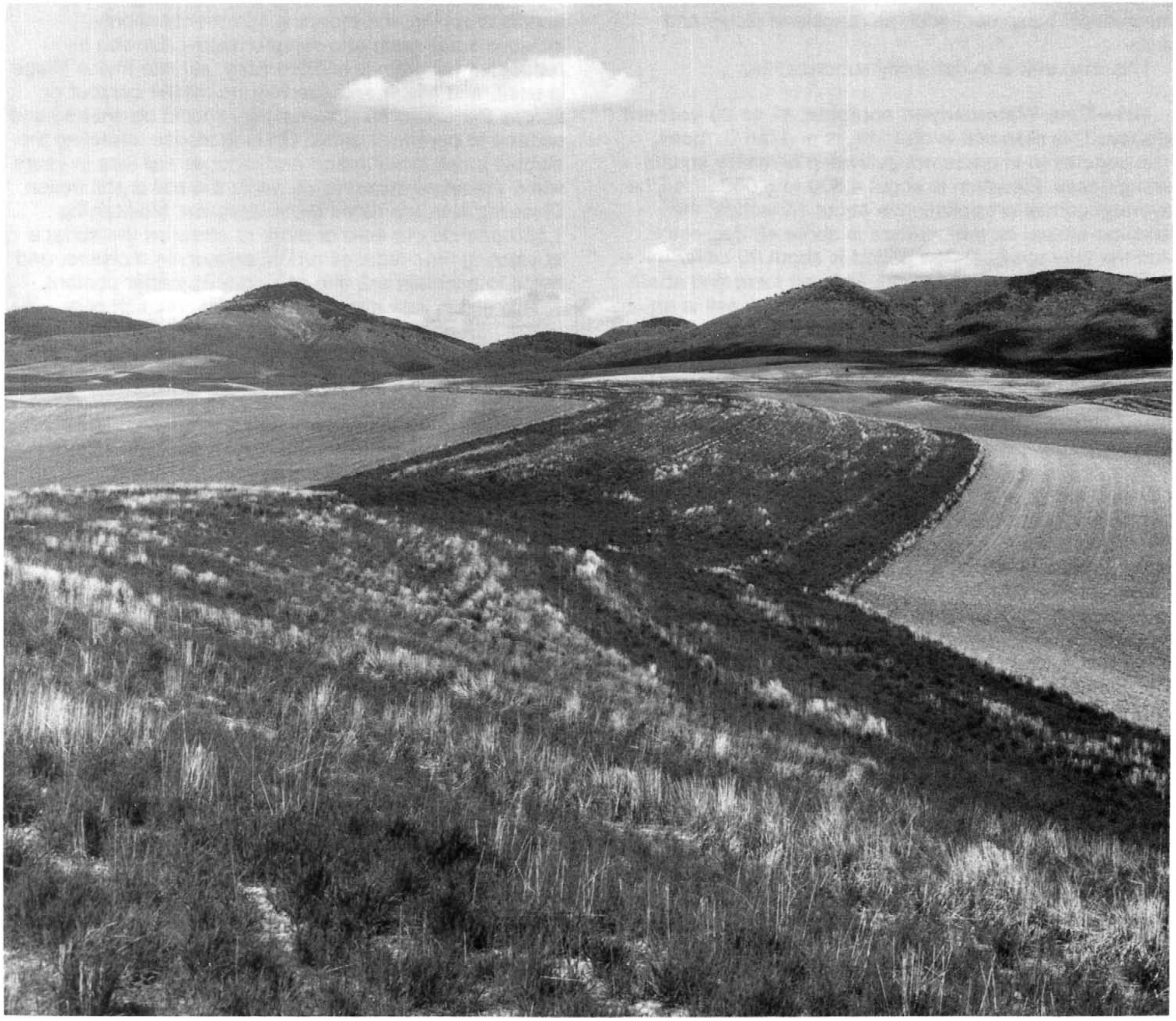

Figure 10.—Typical area of Ririe-Watercanyon complex, 4 to 12 percent slopes. Watercanyon soil has been seeded to pubescent wheatgrass as a soil conservation measure.

This unit is very susceptible to the formation of a tillage pan and other compacted layers, which reduce the permeability of the soil and restrict root penetration. Deep subsoiling in fall helps to break up the compacted layers.

This unit is well suited to use as rangeland. The potential natural plant community on the Ririe soil is mainly mountain big sagebrush and bluebunch wheatgrass. The potential natural plant community on the Watercanyon soil is mainly mountain big sagebrush, bluebunch wheatgrass, Thurber needlegrass, and arrowleaf balsamroot. This unit is suited to the use of mechanical equipment such as rangeland plows and drills.

This map unit is in capability subclass IIIe.

101—Ririe-Watercanyon complex, 12 to 20 percent slopes. This map unit is on foothills and fan terraces. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,800 to 6,000 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

This unit is about 50 percent Ririe silt loam and about 30 percent Watercanyon silt loam. The Ririe soil is on plane to slightly concave, north- and east-facing side slopes, and the Watercanyon soil is on ridgetops and slightly convex, south- and west-facing side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is Hondoho cobbly silt loam on convex side slopes along drainageways and on some north-facing side slopes, about 5 percent is Cedarhill very cobbly silt loam on south- and west-facing side slopes, and about 5 percent is Ricrest gravelly silt loam on slightly convex, south- and west-facing side slopes. The remaining 5 percent is small areas of Joevar silt loam, Inkom silt loam, and soils that have slopes of less than 12 percent or more than 20 percent.

The Ririe soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. Typically, the surface layer is brown silt loam 12 inches thick. The underlying material to a depth of 60 inches or more is pale brown and very pale brown, calcareous silt loam.

Permeability of the Ririe soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Watercanyon soil is very deep and well drained. It formed in loess and in alluvium derived from loess. Typically, the surface layer is pale brown, calcareous silt loam 7 inches thick. The subsoil is pale brown, calcareous silt loam 9 inches thick. The substratum to a depth of 60 inches or more is pale brown, light gray, and very pale brown, calcareous silt loam.

Permeability of the Watercanyon soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

Most areas of this unit are used as nonirrigated cropland. A few areas are used as rangeland.

This unit is suited to nonirrigated crops. It is used for the production of wheat and barley. The unit is limited mainly by low precipitation and the very high hazard of water erosion. Because precipitation is marginal for annual cropping, the cropping system commonly includes small grain and summer fallow. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

This unit is very susceptible to the formation of a tillage pan and other compacted layers, which reduce the permeability of the soil and restrict root penetration. Deep subsoiling in fall helps to break up the compacted layers.

This unit is well suited to use as rangeland. The potential natural plant community on the Ririe soil is mainly mountain big sagebrush and bluebunch wheatgrass. The potential natural plant community on the Watercanyon soil is mainly mountain big sagebrush, bluebunch wheatgrass, Thurber needlegrass, and arrowleaf balsamroot. This unit is suited to the use of mechanical equipment such as rangeland plows and drills. The main limitation is the very high hazard of water erosion. Nonmechanical treatment practices may be more suitable.

This map unit is in capability subclass IVe.

102—Ririe-Watercanyon complex, 20 to 30 percent slopes. This map unit is on foothills and fan terraces. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,800 to 6,000 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

This unit is about 50 percent Ririe silt loam and about 30 percent Watercanyon silt loam. The Ririe soil is on plane to slightly concave, north- and east-facing side slopes, and the Watercanyon soil is on ridgetops and slightly convex, south- and west-facing side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is Hondoho cobbly silt loam on convex side slopes along drainageways and on some north-facing side slopes, about 5 percent is Cedarhill very cobbly silt loam on south- and west-facing side slopes, and about 5 percent is Ricrest gravelly silt loam on slightly convex, south- and west-facing side slopes. The remaining 5 percent is small areas of Joevar silt loam, Inkom silt loam, and soils that have slopes of less than 20 percent or more than 30 percent.

The Ririe soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. Typically, the surface layer is brown silt loam 12 inches thick. The underlying material to a depth of 60 inches or more is pale brown and very pale brown, calcareous silt loam.

Permeability of the Ririe soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Watercanyon soil is very deep and well drained. It formed in loess and in alluvium derived from loess. Typically, the surface layer is pale brown, calcareous silt loam 7 inches thick. The subsoil is pale brown, calcareous silt loam 9 inches thick. The substratum to a depth of 60 inches or more is pale brown, light gray, and very pale brown, calcareous silt loam.

Permeability of the Watercanyon soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

Most areas of this unit are used as rangeland. A few areas are used as nonirrigated cropland.

This unit is well suited to use as rangeland. The potential natural plant community on the Ririe soil is mainly mountain big sagebrush and bluebunch wheatgrass. The potential natural plant community on the Watercanyon soil is mainly mountain big sagebrush, bluebunch wheatgrass, Thurber needlegrass, and arrowleaf balsamroot. Use of mechanical equipment such as rangeland plows and drills is not practical on the unit because of the steepness of slope and the very high hazard of water erosion. Nonmechanical treatment practices may be more suitable.

This unit is poorly suited to nonirrigated crops. It is used for the production of wheat and barley. The unit is limited mainly by the steepness of slope, the very high hazard of water erosion, and low precipitation. Because precipitation is marginal for annual cropping, the cropping system commonly includes small grain and summer fallow. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. This unit may need to be seeded to permanent cover to reduce erosion.

This unit is very susceptible to the formation of a tillage pan and other compacted layers, which reduce the permeability of the soil and restrict root penetration. Deep subsoiling in fall helps to break up the compacted layers.

This map unit is in capability subclass VIe.

103—Ririe-Watercanyon-Cedarhill complex, 12 to 30 percent slopes. This map unit is on foothills and mountainsides. The native vegetation is mainly small trees, shrubs, and grasses. Elevation is about 4,900 to 6,200 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

This unit is about 30 percent Ririe silt loam, about 25 percent Watercanyon silt loam, and about 20 percent Cedarhill very cobbly silt loam. The Ririe soil is generally on plane or slightly concave, north- and east-facing side slopes, the Watercanyon soil is generally on plane to slightly convex, south- and west-facing side slopes, and the Cedarhill soil is generally on convex, south- and west-facing side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is Ricrest gravelly silt loam on concave, north- and east-facing side slopes, about 5 percent is Trailcreek very fine sandy loam near volcanic ash outcrops, generally on south- and west-facing side slopes, and about 5 percent is Lonigan cobbly silt loam near volcanic breccia and tuff outcrops, generally on south- and west-facing side slopes. The remaining 5 percent is small areas of Hondoho cobbly silt loam, Lanoak silt loam, Rock outcrop, volcanic ash, tuff, volcanic breccia, and soils that have slopes of less than 12 percent or more than 30 percent.

The Ririe soil is very deep and well drained. It formed in loess and in silty alluvium derived from loess. Typically, the surface layer is brown silt loam 12 inches thick. The underlying material to a depth of 60 inches or more is pale brown and very pale brown, calcareous silt loam.

Permeability of the Ririe soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Watercanyon soil is very deep and well drained. It formed in loess and in alluvium derived from loess.

Typically, the surface layer is pale brown calcareous silt loam 7 inches thick. The subsoil is pale brown, calcareous silt loam 9 inches thick. The substratum to a depth of 60 inches or more is pale brown, light gray, and very pale brown, calcareous silt loam.

Permeability of the Watercanyon soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Cedarhill soil is very deep and well drained. It formed in alluvium and colluvium derived dominantly from limestone and related sedimentary and metasedimentary rock. Typically, the surface layer is brown, calcareous very cobbly silt loam 9 inches thick. The upper 19 inches of the underlying material is very pale brown and light yellowish brown, calcareous very cobbly silt loam, and the lower part to a depth of 60 inches or more is light yellowish brown, calcareous very cobbly loam.

Permeability of the Cedarhill soil is moderate. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

Most areas of the Ririe and Watercanyon soils are used as rangeland. Most areas of the Cedarhill soil are used as grazeable woodland and woodland. A few areas of this unit are used as nonirrigated cropland.

This unit is well suited to use as rangeland and grazeable woodland. The potential natural plant community on the Ririe soil is mainly mountain big sagebrush and bluebunch wheatgrass. The potential natural plant community on the Watercanyon soil is mainly mountain big sagebrush, bluebunch wheatgrass, Thurber needlegrass, and arrowleaf balsamroot. The potential natural plant community on the Cedarhill soil is mainly Utah juniper, bluebunch wheatgrass, and Indian ricegrass. Mechanical equipment such as rangeland plows and drills is suited to use in areas of the Ririe and Watercanyon soils that have slopes of 20 percent or less, but their use is limited on the Cedarhill soil because of the very cobbly surface. Use of mechanical equipment is not practical in areas where slopes are more than 20 percent because of the very high hazard of erosion and the very cobbly surface of the Cedarhill soil.

This unit is poorly suited to nonirrigated crops. It is used for the production of wheat and barley. The unit is limited mainly by low precipitation, by the very high hazard of erosion, and by the very cobbly surface of the Cedarhill soil. Because precipitation is marginal for annual cropping, the cropping system commonly includes small grain and summer fallow. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds per acre or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content. The areas of soils that have slopes of more than 20 percent and the very cobbly surface of the Cedarhill soil may hinder the use of machinery. The areas of soils that have slopes of more than 20 percent may need to be seeded to permanent cover to reduce erosion.

In a few areas of the Cedarhill soil, some Utah juniper is cut for fenceposts and firewood. On the basis of a basal area attained when the diameter of trees at a height of 1 foot averages 5 inches, the average site index for Utah juniper is 105. Yield tables indicate that the maximum average annual growth is 31 cubic feet per acre of Utah juniper at 100 years of age.

This map unit is in capability subclass VIe.

104—Rock outcrop. This map unit is on steep and very steep sides of mountains and canyons. It is about 95 percent outcrops of various kinds of rock, mainly quartzite, limestone, and dolomite. The rock is fractured in places, and some soil material is in the crevices. The remaining 5 percent is small areas of Valmar soils in areas of quartzite outcroppings and of Ireland and Ridgecrest soils in areas of limestone and dolomite outcroppings.

This map unit is not suited to most land uses.

This map unit is in capability subclass VIIIs.

105—Rubble land-Haploxerolls complex, steep. This map unit is on the edges of the Portneuf Basalt. Slopes are dominantly 30 to 60 percent, but they range from about 20 percent to vertical cliffs. The native vegetation is mainly shrubs and grasses, which are on the Haploxerolls part of the unit. Elevation is about 4,500 to 4,700 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 90 days.

This unit is about 50 percent Rubble land and about 40 percent Haploxerolls. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 10 percent of the total acreage of this unit. Of this, about 5 percent is gravel deposited by the Bonneville Flood. The remaining 5 percent is small areas of Lava flows and soils that have slopes of less than 20 percent.

Rubble land consists mainly of areas of stones and boulders that support little vegetation except for mosses and lichens and a few stunted shrubs or trees growing between the rock fragments. It was deposited primarily by the spalling of the edges and cliffs of the Portneuf basalt. The stones and boulders are angular to subangular and are 1 foot to 10 feet in diameter. Areas of Rubble land are not suited to most land uses.

Haploxerolls consist of deep and very deep, well drained soils that are too variable in texture to map as individual units. They formed in alluvium and colluvium derived from mixed sources. Typically, the surface layer is grayish brown gravelly silt loam, cobbly sandy loam, or extremely bouldery loam about 8 inches thick. The subsoil is brown gravelly silt loam, very gravelly silt loam, very cobbly sandy loam, or extremely bouldery loam about 7 inches thick. The substratum to a depth of 40 to 60 inches is pale brown very gravelly silt loam, very cobbly sand, or extremely bouldery sandy loam.

Permeability of the Haploxerolls is moderate. Available water capacity is low. Effective rooting depth is 40 to 60 inches. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland in areas that are accessible and where slopes are not excessive.

This unit is very poorly suited to use as rangeland. The potential natural plant community on the Haploxerolls is mainly mountain big sagebrush and bluebunch wheatgrass. The main limitations are steepness of slope, areas devoid of vegetation, and accessibility.

This map unit is in capability subclass VIIs.

106—Scout Variant-Camelback Variant association, 30 to 60 percent slopes. This map unit is on mountainsides. Elevation is about 7,000 to 9,200 feet.

This unit is about 40 percent Scout Variant gravelly silt loam and about 35 percent Camelback Variant gravelly silt loam. The Scout Variant soil is on concave side slopes, and the Camelback Variant soil is on convex side slopes.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 5 percent is Sedgway gravelly silt loam on concave, south- and west-facing side slopes, about 5 percent is Beaverdam silt loam on concave, north- and east-facing side slopes, about 5 percent is Mikesell silt loam in concave areas on the lower part of side slopes, and about 5 percent is soils that have slopes of less than 30 percent or more than 60 percent. The remaining 5 percent is small areas of Rock outcrop, talus, a soil that is similar to the Scout Variant soil but has an extremely stony surface layer, and Valmar Variant very stony silt loam.

The Scout Variant soil is very deep and well drained. It formed in alluvium and colluvium derived dominantly from quartzite. The native vegetation is mainly trees and grasses. The average annual precipitation is about 30 inches, the average annual air temperature is about 37 degrees F, and the average frost-free period is less than 50 days. Typically, an intermittent duff layer about 2 inches thick is on the surface. The surface layer is brown gravelly silt loam 3 inches thick. The subsurface layer is pale brown very cobbly silt loam 13 inches thick. The subsoil to a depth of 60 inches or more is light yellowish brown extremely stony silt loam and extremely cobbly loam.

Permeability of the Scout Variant soil is moderate. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Camelback Variant soil is very deep and well drained. It formed in alluvium and colluvium derived dominantly from quartzite. The native vegetation is mainly shrubs and grasses. The average annual precipitation is about 22 inches, the average annual air temperature is about 39 degrees F, and the average frost-free period is about 60 days. Typically, the surface layer is very dark grayish brown and dark brown gravelly silt loam 10 inches thick. The upper 21 inches of the subsoil is yellowish brown very cobbly loam, and the lower part to a depth of 60 inches or more is yellowish brown extremely cobbly loam.

Permeability of the Camelback Variant soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as woodland, grazeable woodland, and rangeland.

The potential natural plant community on the Scout Variant soil is mainly an overstory of subalpine fir and an understory dominated by pine reedgrass. The potential natural plant community on the Camelback Variant soil is mainly subalpine big sagebrush, mountain snowberry, and slender wheatgrass.

The Scout Variant soil is suited to the production of subalpine fir. On the basis of a 100-year site curve, the average site index for subalpine fir is 70. Yield tables indicate that the maximum average annual growth is 63 cubic feet per acre of subalpine fir at 110 years of age. The main concerns in producing and harvesting timber are the hazard of water erosion, the steepness of slope, and the hazard of plant competition. Minimizing the risk of erosion is essential in harvesting timber. Erosion can be reduced by carefully planning the construction and maintenance of logging roads, skid trails, and landings. Cuts and fills should be seeded, and water bars and culverts should be installed. The steepness of slope limits the kinds of equipment that can be used for harvesting timber. If the site is not adequately prepared, competition from undesirable plants can prevent or prolong natural or artificial reestablishment of trees.

The Scout Variant soil is suited to the production of understory plants suitable for grazing. It can produce additional forage for livestock and wildlife for 15 to 30 years after the canopy is opened by logging, fire, or other disturbance. During this period annual production of understory ranges from 3,000 pounds of air-dry vegetation per acre to less than 300 pounds per acre as the canopy closes. Use of forage by livestock in some areas of this soil is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. In spring, cold soil temperatures limit early plant growth. Grazing should be delayed until the plants have achieved sufficient growth.

The Camelback Variant soil is suited to use as rangeland. It is limited mainly by steepness of slope and cool soil temperatures. Use of mechanical equipment such as rangeland plows and drills is not practical on this soil because of the steepness of slope. Use of forage by livestock in some areas of this soil is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. In spring, cold soil temperatures limit early plant growth. Grazing should be delayed until the plants have achieved sufficient growth.

This map unit is in capability subclass VIIe.

107—Sedgway-Beaverdam complex, 30 to 60 percent slopes. This map unit is on mountainsides. The native vegetation is mainly trees with an understory dominated by grasses. Elevation is about 6,000 to 7,500 feet. The average annual precipitation is about 26 inches, the average annual air temperature is about 39 degrees F, and the average frost-free period is less than 50 days.

This unit is about 40 percent Sedgway gravelly silt loam and about 35 percent Beaverdam silt loam. The Sedgway soil is typically on the shoulder slopes and midslopes, and the Beaverdam soil is typically on the foot slopes. This unit is mostly on north- and east-facing side slopes.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is Yago extremely stony silty clay loam on shoulder slopes, about 5 percent is Toponce silt loam on concave, south- or west-facing foot slopes, and about 5 percent is Dateman cobbly silt loam on shoulder slopes and ridgetops. The remaining 5 percent is small areas of Pavohroo silt loam, a soil that is similar to the Beaverdam soil but has an extremely bouldery surface layer, Camelback very gravelly silt loam, Valmar very cobbly silt loam, Ireland extremely stony silt loam, Rock outcrop, and very deep, poorly drained and somewhat poorly drained soils.

The Sedgway soil is very deep and well drained. It formed in alluvium and colluvium derived dominantly from sedimentary and metasedimentary rock. Typically, an intermittent duff layer of needles, leaves, twigs, and grass about 2 inches thick is on the surface. The upper 5 inches of the surface layer is very dark grayish brown gravelly silt loam, and the lower 7 inches is dark grayish brown very cobbly silt loam. The subsurface layer is pale brown very cobbly loam 9 inches thick. The upper 6 inches of the subsoil is 80 percent yellowish brown very cobbly clay loam and 20 percent pale brown very cobbly loam, and the lower part to a depth of 60 inches or more is yellowish brown very cobbly clay loam.

Permeability of the Sedgway soil is moderately slow. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Beaverdam soil is very deep and well drained. It formed in mixed alluvium derived dominantly from quartzite and sandstone. Typically, an intermittent duff layer of needles, leaves, twigs, and grass 1.5 inches thick is on the surface. The surface layer is dark grayish brown and brown silt loam 12 inches thick. The subsoil to a depth of 60 inches or more is light yellowish brown silty clay loam and silty clay.

Permeability of the Beaverdam soil is slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used mainly for timber production. It is also used for grazing.

The potential natural plant community on the unit is mainly an overstory of Douglas-fir and an understory dominated by pine reedgrass.

The Sedgway and Beaverdam soils are well suited to the production of Douglas-fir. On the basis of a 50-year site curve, the average site index for Douglas-fir on the Sedgway soil is 65. Yield tables indicate that the maximum average annual growth is 85 cubic feet per acre of Douglas-fir at 40 years of age. On the basis of a 50-year site curve, the average site index for Douglas-fir on the Beaverdam soil is 70. Yield tables indicate that the maximum average annual growth is 96 cubic feet per acre of Douglas-fir at 40 years of age.

The main concerns in producing and harvesting timber are the hazard of water erosion, slope, and the hazard of plant competition. Minimizing the risk of erosion is essential in harvesting timber. Excessive erosion is avoided by carefully planning the construction and maintenance of logging roads, skid trails, and landings. Cuts and fills should be seeded, and water bars and culverts should be installed. The steepness of slope limits the kinds of equipment that can be used for harvesting timber. If the overstory canopy is removed, the soil temperature increases. This may hinder the regeneration of timber. Competition from quaking aspen, shrubs, and grasses may also hinder regeneration. If the site is not adequately prepared, competition from undesirable plants can prevent or prolong natural or artificial reestablishment of trees.

This unit is suited to the production of understory plants suitable for grazing. It can produce additional forage for livestock and wildlife for 30 to 60 years after the canopy is opened by logging, fire, or other disturbance. During this period annual production of understory ranges from 3,000 pounds of air-dry vegetation per acre to less than 300 pounds per acre as the canopy closes. In spring, cold soil temperatures limit early plant growth. Grazing should be delayed until the plants have achieved sufficient growth. Use of forage by livestock in some areas of this unit is limited because of the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas.

Livestock and wildlife concentrate in the included areas of poorly drained and somewhat poorly drained soils within this unit. These areas provide access to water, and they produce the more palatable vegetation when not overused. If economically feasible, these areas should be managed using a deferred grazing system. It is likely that many of these areas will be considered sacrifice areas when developing an overall grazing plan.

This map unit is in capability subclass VIIe.

108—Slickens. Slickens is made up largely of chemically treated freshly, ground rock that is a waste product of phosphate ore mills. The material is detrimental to plant growth.

This unit is not suited to most land uses.

This map unit is in capability subclass VIIIs.

109—Swanner-Hondoho complex, 12 to 20 percent slopes. This map unit is on mountainsides. The native vegetation is mainly shrubs and grasses. Elevation is about 5,000 to 6,000 feet. The average annual precipitation is about 13 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 95 days.

This unit is about 50 percent Swanner extremely stony loam and about 30 percent Hondoho cobbly silt loam. The Swanner soil is on west-facing side slopes above vertical cliffs and on ridgetops, and the Hondoho soil is on east-facing, concave side slopes and on west-facing foot slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is Rock outcrop intermingled with areas of the Swanner soil, about 5 percent is Ririe silt loam on concave, north- and east-facing side slopes, and about 5 percent is soils that are similar to the Swanner soil but have slopes of less than 12 percent. The remaining 5 percent is small areas of soils that are similar to the Swanner soil but have a gravelly surface and soils that have slopes of more than 20 percent.

The Swanner soil is shallow and well drained. It formed in loess, silty alluvium, and material weathered from andesite. Typically, the surface layer is dark brown extremely stony loam 9 inches thick. The subsoil is yellowish brown extremely stony loam 8 inches thick. Andesite is at a depth of 17 inches. Depth to bedrock ranges from 10 to 20 inches.

Permeability of the Swanner soil is moderate. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is very rapid, and the hazard of water erosion is very high.

The Hondoho soil is very deep and well drained. It formed in mixed alluvium. Typically, the surface layer is grayish brown cobbly silt loam 8 inches thick. The subsoil is brown, calcareous cobbly silt loam 7 inches thick. The substratum to a depth of 60 inches or more is light yellowish brown and pale brown, calcareous very cobbly loam.

Permeability of the Hondoho soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is poorly suited to use as rangeland. The main limitations are the limited amount of forage produced by the Swanner soil and the shortage of water for livestock. The potential natural plant community on the Swanner soil is mainly bluebunch wheatgrass and low sagebrush. The potential natural plant community on the Hondoho soil is mainly bluebunch wheatgrass and mountain big sagebrush. Livestock watering facilities need to be developed or improved for summer and fall use of this unit. Use of mechanical equipment such as rangeland plows and drills is not practical on the unit because of the extremely stony surface of the Swanner soil, the cobbly surface of the Hondoho soil, and the areas of Rock outcrop.

This map unit is in capability subclass VIIs.

110—Swanner-Rock outcrop complex, 50 to 80 percent slopes. This map unit is on mountainsides. The native vegetation is mainly shrubs and grasses. Elevation is about 4,700 to 6,000 feet. The average annual precipitation is about 13 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is abut 90 days.

This unit is about 45 percent Swanner extremely stony loam and about 30 percent Rock outcrop. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is talus in areas below Rock outcrop and about 5 percent is vertical rock cliffs. The remaining 10 percent is small areas of Ririe silt loam, soils that have slopes of less than 50 percent, and Cedarhill very cobbly silt loam.

The Swanner soil is shallow and well drained. It formed in loess, silty alluvium, and material weathered from andesite. Typically, the surface layer is dark brown extremely stony loam 9 inches thick. The subsoil is yellowish brown extremely stony loam 8 inches thick. Andesite is at a depth of 17 inches. Depth to bedrock ranges from 10 to 20 inches.

Permeability of the Swanner soil is moderate. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is very rapid, and the hazard of water erosion is very high.

Rock outcrop consists of areas of exposed andesite. It is weathered and fractured and can occur anywhere in this unit.

Areas of this unit suitable for grazing are used as rangeland.

This unit is poorly suited to use as rangeland. The main limitations are low production, steepness of slope, and the areas of Rock outcrop. The potential natural plant community on the Swanner soil is mainly low sagebrush and bluebunch wheatgrass. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Livestock watering facilities need to be developed or improved for summer and fall use of the unit. Use of mechanical equipment such as rangeland plows and drills is not practical because of the steepness of slope, the areas of Rock outcrop, and the extremely stony surface of the Swanner soil.

This map unit is in capability subclass VIIs.

111—Tendoy muck, drained, 0 to 1 percent slopes. This very deep, very poorly drained soil is on flood plains. It formed in organic material derived from herbaceous plants. The drainage of this unit has been altered by dredging and straightening of stream channels. The native vegetation is mainly grasses, sedges, and rushes. Elevation is about 4,550 to 4,750 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

Typically, the surface layer is very dark grayish brown, calcareous silt loam 2 inches thick. The upper 5 inches of the next layer is black, calcareous sapric material, and the lower 3 inches is black sapric material. The next layer to a depth of 60 inches or more is black sapric material.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 10 percent is soils that are similar to the Tendoy soil but are less than 60 inches deep over mineral soil material. These soils are near the edges of the bog and on isolated islands in the unit. The remaining 5 percent is small areas of Bear Lake silt loam, Downata silt loam, and soils that have as much as 20 inches of mineral soil material over organic layers; small ponds; and small areas of soils that are more than 35 percent rock fragments.

Permeability of this Tendoy soil is moderate. Available water capacity is very high. Effective rooting depth is 60 inches or more for water-tolerant plants. This soil has a seasonal high water table that extends from 6 inches above the surface to 6 inches below the surface from February through June. Runoff is very slow, and the hazard of water erosion is none. This soil is subject to frequent, brief periods of flooding from January through June. It is subject to subsidence and accelerated decomposition of the organic matter if it is allowed to dry. The water table should be maintained as near the surface as feasible. Also, this soil will burn when dry. It is very difficult to extinguish a fire in this soil; flooding of the area may be needed to put the fire out.

This unit is used for the production of meadow hay and pasture.

This unit is suited to hay and pasture. The potential natural plant community on the unit is mainly Nebraska sedge, other sedges, and tufted hairgrass. The main limitation is wetness. Wetness limits the choice of plants and the period of harvesting or grazing and increases the risk of winterkill. Plants that tolerate wetness should be seeded. Grazing and harvesting of hay should be delayed until the soil has drained sufficiently and is firm enough to withstand trampling by livestock and support the weight of harvesting equipment. This unit is capable of producing about 2 tons of grass hay per acre if not irrigated and about 2.5 tons if irrigated.

This map unit is in capability subclass Vw, irrigated and nonirrigated.

112—Toponce-Broadhead association, 6 to 30 percent slopes. This map unit is on foothills and fan terraces. Elevation is about 6,200 to 6,900 feet.

This unit is about 50 percent Toponce silt loam and about 30 percent Broadhead silt loam. The Toponce soil is in concave areas, and the Broadhead soil is in convex areas.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 10 percent is Yago extremely stony silty clay loam and about 5 percent is soils that are similar to the Broadhead soil but have a high shrink-swell potential in the surface layer; these soils are on landscape positions similar to those of the Broadhead soil. The remaining 5 percent is small areas of Sedgway gravelly silt loam, Hades gravelly silt loam, and Beaverdam silt loam.

The Toponce soil is very deep and well drained. It formed in alluvium derived dominantly from quartzite and sandstone. The native vegetation is mainly trees and grasses. The average annual precipitation is about 22 inches, the average annual air temperature is about 39 degrees F, and the average frost-free period is about 55 days. Typically, the upper 3 inches of the surface layer is dark grayish brown silt loam and the lower 11 inches is dark grayish brown silty clay loam. The subsoil to a depth of 60 inches or more is dark brown silty clay loam and brown silty clay and clay.

Permeability of the Toponce soil is slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Broadhead soil is very deep and well drained. It formed in mixed alluvium derived dominantly from quartzite and sandstone. The native vegetation is mainly shrubs and grasses. The average annual precipitation is about 20 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 70 days. Typically, the upper 2 inches of the surface layer is very dark grayish brown silt loam and the lower 7 inches is very dark grayish brown silty clay loam. The subsoil to a depth of 60 inches or more is dark grayish brown and brown silty clay loam.

Permeability of the Broadhead soil is slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as woodland, grazeable woodland, and rangeland.

The potential natural plant community on the Toponce soil is mainly an overstory of quaking aspen and an understory dominated by pine reedgrass. The potential natural plant community on the Broadhead soil is mainly mountain big sagebrush and bluebunch wheatgrass.

The Toponce soil is suited to the production of quaking aspen. On the basis of an 80-year site curve, the average site index for quaking aspen is 65. Yield tables indicate that the maximum average annual growth is 36 cubic feet per acre of quaking aspen at 80 years of age. Most of the aspen harvested is used as firewood.

This Toponce soil is also well suited to the production of understory plants suitable for grazing. It can produce additional forage for livestock and wildlife for 10 to 20 years after the canopy is opened by logging, fire, or other disturbance. During this period annual production of understory ranges from 3,000 pounds of air-dry vegetation per acre to less than 300 pounds per acre as the canopy closes. In spring, cold soil temperatures limit early plant growth. Grazing should be delayed until the plants have achieved sufficient growth.

The Broadhead soil is well suited to use as rangeland. Grazing when the soil is wet results in compaction of the surface layer, poor tilth, and excessive runoff. The suitability of this soil for rangeland seeding is good. Seedbed preparation should be on the contour or across the slope where practical.

This map unit is in capability subclass IVe.

113—Urban land-Bahem-Broxon complex, 0 to 3 percent slopes. This map unit is on terraces. Elevation is about 4,400 to 4,500 feet. The average annual precipitation is about 10 inches, the average annual air temperature is about 47 degrees F, and the average frost-free period is about 120 days.

This unit is about 50 percent Urban land, about 20 percent Bahem silt loam, and about 20 percent Broxon silt loam. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 10 percent of the total acreage of this unit. Of this, about 5 percent is Broncho cobbly loam on terrace breaks. The remaining 5 percent is small areas of McDole silt loam and soils that have slopes of more than 3 percent.

Urban land consists of streets, parking lots, buildings, and other structures within the cities of Pocatello and Chubbuck.

The Bahem soil is very deep and well drained. It formed in silty alluvium overlying flood-deposited sand, gravel, cobbles, and stones of mixed mineralogy. Typically, the surface layer is pale brown, calcareous silt loam 11 inches thick. The upper 38 inches of the underlying material is pale brown, white, and light gray, calcareous silt loam, and the lower part to a depth of 60 inches or more is multicolored extremely cobbly sand. Depth to extremely cobbly sand ranges from 40 to 60 inches.

Permeability of the Bahem soil is moderate to a depth of 49 inches and very rapid below this depth. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

The Broxon soil is very deep and well drained. It formed in silty alluvium overlying flood-deposited sand, gravel, cobbles, and stones of mixed mineralogy. Typically, the surface layer is pale brown, calcareous silt loam 8 inches thick. The upper 17 inches of the underlying material is white and pale brown, calcareous silt loam, and the lower part to a depth of 60 inches or more is multicolored extremely stony sand. Depth to extremely stony sand ranges from 20 to 40 inches.

Permeability of the Broxon soil is moderate to a depth of 25 inches and very rapid below this depth. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

Most areas of this unit are used for homesite and urban development. A few areas are used for recreation.

If this unit is used for homesite and urban development, the main limitations are the moderate permeability of the Bahem soil, seepage in the Broxon soil, and the hazard of frost action in the silty overlying material and the hazard of cutbanks caving in because of the underlying material of both soils. Community sewage systems are needed on this unit. Frost action potential is a limitation in maintaining roads, streets, driveways, and sidewalks. Cutbanks are not stable and are subject to slumping.

This unit is well suited to recreational development. It is limited mainly by dustiness. Areas used for recreation can be protected from dustiness by maintaining plant cover.

This unit is not assigned to a capability subclass.

114—Urban land-Bahem-Broxon complex, 3 to 6 percent slopes. This map unit is on terraces. Elevation is about 4,400 to 4,500 feet. The average annual precipitation is about 10 inches, the average annual air temperature is about 47 degrees F, and the average frost-free period is about 120 days.

This unit is about 50 percent Urban land, about 20 percent Bahem silt loam, and about 20 percent Broxon silt loam. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 10 percent of the total acreage of this unit. Of this, about 5 percent is Broncho cobbly loam on terrace breaks. The remaining 5 percent is small areas of Broncho Variant very gravelly loam, Pocatello silt loam, and soils that have slopes of more than 6 percent.

Urban land consists of streets, parking lots, buildings, and other structures within the cities of Pocatello and Chubbuck.

The Bahem soil is very deep and well drained. It formed in silty alluvium overlying flood-deposited sand, gravel, cobbles, and stones of mixed mineralogy. Typically, the surface layer is pale brown, calcareous silt loam 11 inches thick. The upper 38 inches of the underlying material is pale brown, white, and light gray, calcareous silt loam, and the lower part to a depth of 60 inches or more is multicolored extremely cobbly sand. Depth to extremely cobbly sand ranges from 40 to 60 inches.

Permeability of the Bahem soil is moderate to a depth of 49 inches and very rapid below this depth. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is moderate.

The Broxon soil is very deep and well drained. It formed in silty alluvium overlying flood-deposited sand, gravel, cobbles and stones of mixed mineralogy. Typically, the surface layer is pale brown, calcareous silt loam 8 inches thick. The upper 17 inches of the underlying material is white and pale brown, calcareous silt loam, and the lower part to a depth of 60 inches or more is multicolored extremely stony sand. Depth to extremely stony sand ranges from 20 to 40 inches.

Permeability of the Broxon soil is moderate to a depth of 25 inches and very rapid below this depth. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is moderate.

Most areas of this unit are used for homesite and urban development. A few areas are used for recreation.

If this unit is used for homesite and urban development, the main limitations are the hazard of water erosion, the moderate permeability of the Bahem soil, seepage in the Broxon soil, and the hazard of frost action in the silty overlying material and the hazard of cutbanks caving in because of the underlying material of both soils. The risk of erosion is increased if the soils are left exposed during site development. Erosion can be controlled and maintenance costs reduced by stabilizing areas that have been disturbed. Community sewage systems are needed on this unit. Frost action potential is a limitation in maintaining roads, streets, driveways, and sidewalks. Cutbanks are not stable and are subject to slumping.

This unit is well suited to recreational development. It is limited mainly by dustiness. Areas used for recreation can be protected from dustiness by maintaining plant cover.

This unit is not assigned to a capability subclass.

115—Valmar very cobbly silt loam, low precipitation, 40 to 80 percent slopes. This moderately deep, well drained soil is on convex mountainsides. It formed in alluvium, colluvium, and residuum derived dominantly from quartzite and other related metasedimentary rock. The native vegetation is mainly shrubs and grasses. Elevation is about 5,000 to 6,800 feet. The average annual precipitation is about 16 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

Typically, the surface layer is dark brown and brown very cobbly silt loam 9 inches thick. The upper 5 inches of the subsoil is yellowish brown very cobbly silt loam, and the lower 10 inches is yellowish brown extremely stony silt loam. Quartzite is at a depth of 24 inches. Depth to bedrock ranges from 20 to 40 inches.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 5 percent is a soil that is similar to the Valmar soil but is less than 20 inches deep to bedrock and is on windswept ridges, about 5 percent is Rock outcrop on convex ridges and very steep slopes, about 5 percent is talus below areas of Rock outcrop, and about 5 percent is Camelback very cobbly silt loam in slightly concave areas. The remaining 5 percent is small areas of soils that have slopes of less than 40 percent, volcanic ash outcrops, and Trailcreek very fine sandy loam.

Permeability of this Valmar soil is moderate. Available water capacity is very low. Effective rooting depth is 20 to 40 inches. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is suited to use as rangeland. It is limited mainly by steepness of slope. The potential natural plant community on the unit is mainly mountain big sagebrush, bluebunch wheatgrass, and Nevada bluegrass. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Livestock watering facilities need to be developed or improved for summer and fall use of this unit. Use of mechanical equipment such as rangeland plows and drills is not practical because of the steepness of slope and the very cobbly surface of the soil. Nonmechanical treatment practices may be more suitable.

This map unit is in capability subclass VIIe.

116—Valmar-Camelback-Hades complex, 30 to 60 percent slopes. This map unit is on mountainsides. The native vegetation is mainly shrubs and grasses. Elevation is about 5,000 to 6,500 feet. The average annual precipitation is about 19 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 75 days.

This unit is about 40 percent Valmar very cobbly silt loam, about 25 percent Camelback gravelly silt loam, and about 20 percent Hades gravelly silt loam. The Valmar soil is on convex side slopes and on ridges, the Camelback soil is on slightly convex side slopes, and the Hades soil is in concave areas. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Moonlight silt loam on concave, north- and east-facing side slopes and about 5 percent is soils that are similar to the Valmar soil but are less than 20 inches deep to bedrock and are on ridgetops. The remaining 5 percent is small areas of Rock outcrop, Cedarhill very cobbly silt loam, Ireland extremely stony silt loam, Pavohroo silt loam, Rexburg silt loam, Broadhead silt loam, Trailcreek very fine sandy loam, Coalbank very fine sandy loam, a very deep soil that is similar to the Hades soil and is along drainageways, and soils that have slopes of less than 30 percent or more than 60 percent.

The Valmar soil is moderately deep and well drained. It formed in alluvium, colluvium, and residuum derived from quartzite. Typically, the surface layer is dark brown and brown very cobbly silt loam 9 inches thick. The upper 5 inches of the subsoil is yellowish brown very cobbly silt loam, and the lower 10 inches is yellowish brown extremely stony silt loam. Quartzite is at a depth of 24 inches. Depth to bedrock ranges from 20 to 40 inches.

Permeability of the Valmar soil is moderate. Available water capacity is very low. Effective rooting depth is 20 to 40 inches. Runoff is very rapid, and the hazard of water erosion is very high.

The Camelback soil is deep and well drained. It formed in alluvium, colluvium, and residuum derived dominantly from quartzite. Typically, the surface layer is dark brown gravelly silt loam 21 inches thick. The subsoil is dark brown and yellowish brown extremely cobbly silt loam 21 inches thick. Quartzite is at a depth of 42 inches. Depth to bedrock ranges from 40 to 60 inches.

Permeability of the Camelback soil is moderate. Available water capacity is low. Effective rooting depth is 40 to 60 inches. Runoff is very rapid, and the hazard of water erosion is very high.

The Hades soil is very deep and well drained. It formed in mixed alluvium derived from loess and quartzite. Typically, the surface layer is dark grayish brown and dark brown gravelly silt loam 7 inches thick. The upper 7 inches of the subsoil is dark brown gravelly silt loam, and the lower part to a depth of 60 inches or more is brown, yellowish brown, and light yellowish brown gravelly silty clay loam.

Permeability of the Hades soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is suited to use as rangeland. The potential natural plant community on the unit is mainly bluebunch wheatgrass, mountain big sagebrush, and Nevada bluegrass. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical because of the steepness of slope and the very cobbly surface of the Valmar soil.

This map unit is in capability subclass VIIe.

117—Valmar-Hades complex, 20 to 50 percent slopes. This map unit is on mountainsides and ridges. The native vegetation is mainly shrubs and grasses. Elevation is about 5,200 to 6,500 feet. The average annual precipitation is about 18 inches, the average annual air temperature is about 42 degrees F, and the average frost-free period is about 75 days.

This unit is about 45 percent Valmar extremely stony silt loam and about 30 percent Hades gravelly silt loam. The Valmar soil is on mountain ridges and on convex side slopes, and the Hades soil is on dominantly east-facing mountainsides and in concave areas. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is Camelback gravelly silt loam on slightly convex side slopes, about 5 percent is Moonlight silt loam in concave areas near drainageways, and about 5 percent is Cedarhill very cobbly silt loam, high precipitation, on and near limestone or dolomite ridgetops. The remaining 5 percent is small areas of Rock outcrop, Ridgecrest extremely stony silt loam, a very deep soil that is similar to the Hades soil and is along drainageways, and a soil that is similar to the Valmar soil but has an extremely bouldery surface layer.

The Valmar soil is moderately deep and well drained. It formed in alluvium, colluvium, and residuum derived from quartzite. Typically, the surface layer is dark brown and brown extremely stony silt loam 9 inches thick. The upper 5 inches of the subsoil is yellowish brown very stony silt loam, and the lower 10 inches is yellowish brown extremely stony silt loam. Quartzite is at a depth of 24 inches. Depth to bedrock ranges from 20 to 40 inches.

Permeability of the Valmar soil is moderate. Available water capacity is very low. Effective rooting depth is 20 to 40 inches. Runoff is very rapid, and the hazard of water erosion is very high.

The Hades soil is very deep and well drained. It formed in mixed alluvium derived from loess and quartzite. Typically, the surface layer is dark grayish brown and dark brown gravelly silt loam 7 inches thick. The upper 7 inches of the subsoil is dark brown gravelly silt loam, and the lower part to a depth of 60 inches or more is brown, yellowish brown, and light yellowish brown gravelly silty clay loam.

Permeability of the Hades soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is suited to use as rangeland. The potential natural plant community on the unit is mainly bluebunch wheatgrass, Nevada bluegrass, and mountain big sagebrush. Use of mechanical equipment such as rangeland plows and drills is not practical because of the steepness of slope and the extremely stony surface of the Valmar soil. Nonmechanical treatment practices may be more suitable. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas.

This map unit is in capability subclass VIIe.

118—Valmar, cool-Rock outcrop complex, 20 to 60 percent slopes. This map unit is on mountainsides and ridges. The native vegetation is mainly an overstory of small trees and an understory of shrubs and grasses. Elevation is about 5,500 to 7,000 feet. The average annual precipitation is about 18 inches, the average annual air temperature is about 41 degrees F, and the average frost-free period is about 75 days.

This unit is about 60 percent Valmar extremely stony silt loam, cool, and about 25 percent Rock outcrop. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Camelback extremely stony silt loam on slightly concave side slopes and about 5 percent is Sedgway gravelly silt loam on north- and east-facing, concave side slopes. The remaining 5 percent is small areas of soils that have slopes of less than 20 percent and soils that are similar to the Valmar soil but have an extremely bouldery silt loam surface layer.

The Valmar soil is moderately deep and well drained. It formed in alluvium, colluvium, and residuum derived dominantly from quartzite and other related metamorphic rock. Typically, the surface layer is dark brown and brown extremely stony silt loam 9 inches thick. The upper 5 inches of the subsoil is yellowish brown very cobbly silt loam, and the lower 10 inches is yellowish brown extremely stony silt loam. Quartzite is at a depth of 24 inches. Depth to bedrock ranges from 20 to 40 inches.

Permeability of the Valmar soil is moderate. Available water capacity is very low. Effective rooting depth is 20 to 40 inches. Runoff is very rapid, and the hazard of water erosion is very high.

Rock outcrop consists of areas of exposed fractured quartzite and small areas of limestone or dolomite. It can occur anywhere in this unit, but generally it is on convex side slopes and ridges.

This unit is used as rangeland.

This unit is suited to use as rangeland. The potential natural plant community on the Valmar soil is mainly curlleaf mountainmahogany, mountain big sagebrush, bluebunch wheatgrass, Nevada bluegrass, and slender wheatgrass. Use of forage by livestock in some areas of this unit is limited by steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical because of the steepness of slope, the extremely stony surface of the Valmar soil, and the areas of Rock outcrop.

This map unit is in capability subclass VIIs.

119—Valmar, low precipitation-Watercanyon-Hondoho complex, 20 to 50 percent slopes. This map unit is on mountainsides. The native vegetation is mainly shrubs and grasses. Elevation is about 4,500 to 6,500 feet. The average annual precipitation is about 16 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 85 days.

This unit is about 30 percent Valmar very cobbly silt loam, low precipitation, about 25 percent Watercanyon silt loam, and about 20 percent Hondoho cobbly silt loam. The Valmar soil is on the upper part of north- and east-facing mountainsides, the Watercanyon soil is on loess-covered mountainsides, and the Hondoho soil is on south- and west-facing side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 25 percent of the total acreage of this unit. Of this, about 10 percent is Rexburg silt loam on loess-covered, north- and east-facing side slopes at the lower elevations in the unit and about 5 percent is shallow soils that are similar to the Valmar soil and are on ridgetops. The remaining 10 percent is small areas of Rock outcrop, Moonlight silt loam, soils that have slopes of less than 20 percent, and a very deep soil in drainageways.

The Valmar soil is moderately deep and well drained. It formed in alluvium, colluvium, and residuum derived dominantly from quartzite. Typically, the surface layer is dark brown and brown very cobbly silt loam 9 inches thick. The upper 5 inches of the subsoil is yellowish brown very cobbly silt loam, and the lower 10 inches is yellowish brown extremely stony silt loam. Quartzite is at a depth of 24 inches. Depth to bedrock ranges from 20 to 40 inches.

Permeability of the Valmar soil is moderate. Available water capacity is very low. Effective rooting depth is 20 to 40 inches. Runoff is very rapid, and the hazard of water erosion is very high.

The Watercanyon soil is very deep and well drained. It formed in loess and alluvium derived from loess. Typically, the surface layer is pale brown calcareous silt loam 7 inches thick. The subsoil is pale brown, calcareous silt loam 9 inches thick. The substratum to a depth of 60 inches or more is pale brown, light gray, and very pale brown, calcareous silt loam.

Permeability of the Watercanyon soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Hondoho soil is very deep and well drained. It formed in mixed alluvium. Typically, the surface layer is grayish brown cobbly silt loam 8 inches thick. The subsoil is brown, calcareous cobbly silt loam 7 inches thick. The substratum to a depth of 60 inches or more is light yellowish brown and pale brown, calcareous very cobbly sandy clay loam.

Permeability of the Hondoho soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is suited to use as rangeland. The potential natural plant community on the Valmar soil is mainly bluebunch wheatgrass, Nevada bluegrass, and mountain big sagebrush. The potential natural plant community on the Watercanyon soil is mainly bluebunch wheatgrass, Thurber needlegrass, arrowleaf balsamroot, and mountain big sagebrush. The potential natural plant community on the Hondoho soil is mainly bluebunch wheatgrass and mountain big sagebrush. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Use of mechanical equipment such as rangeland plows and drills is not practical because of the steepness of slope and the very cobbly surface of the Valmar soil. Livestock watering facilities need to be developed or improved for summer and fall use of this unit.

This map unit is in capability subclass VIIe.

120—Watercanyon silt loam, 12 to 20 percent slopes. This very deep, well drained soil is on foothills and fan terraces. It formed in loess and in alluvium derived from loess. The native vegetation is mainly shrubs and grasses. Elevation is about 4,500 to 5,500 feet. The average annual precipitation is about 12 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 95 days.

Typically, the surface layer is pale brown, calcareous silt loam 7 inches thick. The subsoil is pale brown, calcareous silt loam 9 inches thick. The substratum to a depth of 60 inches or more is pale brown, light gray, and very pale brown, calcareous silt loam.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Rexburg silt loam on north- and east-facing side slopes and in concave pockets and about 5 percent is Cedarhill very cobbly silt loam on south- and west-facing side slopes. The remaining 5 percent is small areas of soils that have slopes of less than 12 percent or more than 20 percent.

Permeability of this Watercanyon soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

Most areas of this unit are used as rangeland. A few areas are used for homesite development.

This unit is well suited to use as rangeland. The potential natural plant community on the unit is mainly mountain big sagebrush, bluebunch wheatgrass, Thurber needlegrass, and arrowleaf balsamroot. Livestock watering facilities need to be developed or improved for summer and fall use of this unit. This unit is suited to the use of mechanical equipment such as rangeland plows and drills. The main limitation is the very high hazard of water erosion. Nonmechanical treatment practices may be more suitable.

Population growth has resulted in increased construction of homes on this unit. The main limitations for homesite development are slope and susceptibility to erosion. Slope is a concern in installing septic tank absorption fields. Access roads should be designed to provide adequate cut-slope grade, and drains are needed to control surface runoff and keep soil losses to a minimum. Preserving the existing plant cover during construction helps to control erosion. The risk of erosion is increased if the soil is left exposed during site development. Erosion is controlled and maintenance costs reduced by stabilizing areas that have been disturbed.

This map unit is in capability subclass IVe.

121—Watercanyon-Swanner-Rock outcrop complex, 20 to 50 percent slopes. This map unit is on mountainsides and ridges. The native vegetation is mainly shrubs and grasses. Elevation is about 4,500 to 6,000 feet. The average annual precipitation is about 13 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 95 days.

This unit is about 40 percent Watercanyon silt loam, about 30 percent Swanner extremely stony loam, and about 15 percent Rock outcrop. The Watercanyon soil is on loess-covered slopes, the Swanner soil is dominantly on ridgetops and near escarpments and cliffs, and the Rock outcrop is on ridgetops and the upper part of slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Hondoho cobbly silt loam on slightly concave, north- and east-facing side slopes and about 5 percent is Cedarhill very cobbly silt loam on concave, south- and west-facing side slopes. The remaining 5 percent is small areas of Rexburg silt loam, soils that have slopes of less than 20 percent or more than 50 percent, and talus.

The Watercanyon soil is very deep and well drained. It formed in loess and in alluvium derived from loess. Typically, the surface layer is pale brown, calcareous silt loam 7 inches thick. The subsoil is pale brown, calcareous silt loam 9 inches thick. The substratum to a depth of 60 inches or more is pale brown, light gray, and very pale brown, calcareous silt loam.

Permeability of the Watercanyon soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Swanner soil is shallow and well drained. It formed in loess, silty alluvium, and material weathered from andesite. Typically, the surface layer is dark brown extremely stony loam 9 inches thick. The subsoil is yellowish brown extremely stony loam 8 inches thick. Andesite is at a depth of 17 inches. Depth to bedrock ranges from 10 to 20 inches.

Permeability of the Swanner soil is moderate. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is very rapid, and the hazard of water erosion is very high.

Rock outcrop consists of areas of exposed bedrock, mainly fractured andesite. It is nearly vertical cliffs in some areas.

This unit is used as rangeland.

This unit is suited to use as rangeland. The potential natural plant community on the Watercanyon soil is mainly bluebunch wheatgrass, Thurber needlegrass, arrowleaf balsamroot, and mountain big sagebrush. The potential natural plant community on the Swanner soil is mainly low sagebrush and bluebunch wheatgrass. Use of forage by livestock in some areas of this unit is limited by the steepness of slope. This may result in overuse of the less sloping areas adjacent to the steeper areas. Livestock watering facilities need to be developed or improved for summer and fall use of this unit. Use of mechanical equipment such as rangeland plows and drills is not practical on the unit because of the steepness of slope, the areas of Rock outcrop, and the extremely stony surface of the Swanner soil.

This map unit is in capability subclass VIIs.

122—Wursten gravelly silt loam, 1 to 4 percent slopes. This very deep, well drained soil is on stream terraces and fan terraces. It formed in alluvium derived from mixed sources. The vegetation in areas not cultivated is mainly shrubs and grasses. Elevation is about 4,600 to 5,000 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 90 days.

Typically, the surface layer is grayish brown, calcareous gravelly silt loam 9 inches thick. The upper 24 inches of the underlying material is light gray and very pale brown, calcareous gravelly loam, and the lower part to a depth of 60 inches or more is very pale brown, calcareous gravelly silt loam.

Included areas make up about 15 percent of the total acreage of this unit. Of this, about 5 percent is Cedarhill very gravelly silt loam, high precipitation, in slightly convex areas and about 5 percent is Arbone silt loam in concave areas. The remaining 5 percent is small areas of Hondoho gravelly silt loam, Ririe silt loam, Watercanyon silt loam, and soils that have slopes of more than 4 percent.

Permeability of this Wursten soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight. If this soil is irrigated, runoff is medium and the hazard of water erosion is moderate.

Most areas of this unit are used as irrigated cropland. A few areas are used as nonirrigated cropland and as rangeland.

This unit is suited to irrigated crops. It is used for the production of wheat, barley, and alfalfa hay. It is limited mainly by the hazard of water erosion and the gravelly surface of the soil. Sprinkler irrigation is a suitable method of applying water. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion. Irrigation water needs to be applied at a rate that insures optimum production without increasing deep percolation, runoff, and erosion. Leaving crop residue on or near the surface helps to conserve moisture, maintain tilth, and control erosion.

This unit is suited to nonirrigated crops. It is used for the production of wheat and barley. It is limited mainly by low precipitation, hazard of water erosion, and the gravelly surface of the soil. Because precipitation is marginal for annual cropping, the cropping system usually includes small grain and summer fallow. Erosion is reduced if fall grain is seeded early, stubble mulch tillage is used, and tillage and seeding are on the contour or across the slope. Also, waterways should be shaped and seeded to perennial grass. On long slopes, chiseling the stubble in fall slows runoff and reduces soil loss in years when the snow melts rapidly while the soil is still frozen. Chiseling also promotes better aeration. Maintaining 1,500 pounds or more of straw on the surface at planting time reduces runoff, conserves moisture, and helps to maintain soil tilth and organic matter content.

This unit is very susceptible to the formation of a tillage pan and other compacted layers, which reduce the permeability of the soil and restrict root penetration. Deep subsoiling in fall helps to break up the compacted layers.

This unit is well suited to use as rangeland. The potential natural plant community is mainly bluebunch wheatgrass, Wyoming big sagebrush and Nevada bluegrass. The unit is well suited to rangeland seeding.

This map unit is in capability subclasses IIIe, irrigated, and IIIc, nonirrigated.

123—Wursten-Watercanyon Variant-Hondoho complex, 12 to 40 percent slopes. This map unit is on terraces. The native vegetation is mainly shrubs and grasses. Elevation is about 4,600 to 5,000 feet. The average annual precipitation is about 14 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 90 days.

This unit is about 30 percent Wursten gravelly silt loam, about 30 percent Watercanyon Variant silt loam, and about 20 percent Hondoho cobbly silt loam. The Wursten soil is in nearly plane to concave areas, the Watercanyon Variant soil is on convex side slopes, and the Hondoho soil is on north- and east-facing, concave to nearly plane side slopes. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included areas make up about 20 percent of the total acreage of this unit. Of this, about 5 percent is Bear Lake silt loam in concave areas along drainageways, about 5 percent is Downey gravelly silt loam near the upper part of terrace breaks, and about 5 percent is a soil that is similar to the Watercanyon Variant soil but has a cemented pan at a depth of 20 to 40 inches. The remaining 5 percent is small areas of tufa outcrops, Ririe silt loam, Lanoak silt loam, and soils that have slopes of less than 12 percent or more than 40 percent.

The Wursten soil is very deep and well drained. It formed in alluvium derived from mixed sources. Typically, the surface layer is grayish brown, calcareous gravelly silt loam 9 inches thick. The upper 24 inches of the underlying material is light gray and very pale brown, calcareous gravelly loam, and the lower part to a depth of 60 inches or more is very pale brown, calcareous gravelly silt loam.

Permeability of the Wursten soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Watercanyon Variant soil is very deep and well drained. It formed in silty sediment. Typically, the surface layer is pale brown, calcareous silt loam 4 inches thick. The upper 7 inches of the underlying material is white, calcareous silt loam, and the lower part to a depth of 60 inches or more is very pale brown, calcareous silt loam.

Permeability of the Watercanyon Variant soil is moderate. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

The Hondoho soil is very deep and well drained. It formed in mixed alluvium. Typically, the surface layer is grayish brown cobbly silt loam 8 inches thick. The subsoil is brown, calcareous cobbly silt loam 7 inches thick. The substratum to a depth of 60 inches or more is light yellowish brown and pale brown, calcareous very cobbly loam.

Permeability of the Hondoho soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very rapid, and the hazard of water erosion is very high.

This unit is used as rangeland.

This unit is suited to use as rangeland. The potential natural plant community on the Wursten soil is mainly bluebunch wheatgrass, Nevada bluegrass, and Wyoming big sagebrush. The potential natural plant community on the Watercanyon Variant soil is mainly alkali bluegrass and Wyoming big sagebrush. The potential natural plant community on the Hondoho soil is mainly bluebunch wheatgrass and mountain big sagebrush. The production of forage is limited by the high salt content of the Watercanyon Variant soil. Mechanical equipment such as rangeland plows and drills is suitable for use in areas of this unit that have slopes of less than 20 percent, but its use in the steeper areas is limited by the very high hazard of erosion. The suitability of this unit for rangeland seeding is poor. The main limitation is the high salt content of the Watercanyon Variant soil.

This map unit is in capability subclass VIe.

Prime Farmland

In this section, prime farmland is defined and discussed and the prime farmland soils in the survey area are listed.

Prime farmland is of major importance in providing the nation's short- and long-range needs for food and fiber. The acreage of high-quality farmland is limited, and the U.S. Department of Agriculture recognizes that government at local, state, and federal levels, as well as individuals, must encourage and facilitate the wise use of our nation's prime farmland.

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils that are best suited to producing food, seed, forage, fiber, and oilseed crops. Such soils have properties that are favorable for the economic production of sustained high yields of crops. The soils need only to be treated and managed using acceptable farming methods. Adequate moisture and a sufficiently long growing season are required. Prime farmland soils produce the highest yields with minimal units of energy and economic resources, and farming these soils results in the least damage to the environment.

Prime farmland soils either are used for producing food or fiber or are available for these uses. Urban or built-up land and water areas cannot be considered prime farmland.

Prime farmland soils commonly get an adequate and dependable supply of moisture from precipitation or irrigation. Temperature and growing season are favorable, and level of acidity or alkalinity is acceptable. The soils have few, if any, rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods and are not flooded during the growing season. The slope is no more than 4 percent.

Soils that have a high water table, are subject to flooding, or are droughty may qualify as prime farmland soils if the limitations are overcome by drainage, flood control, or irrigation. Onsite evaluation is necessary to determine the effectiveness of corrective measures. More information on the criteria for prime farmland soils can be obtained at the local office of the Soil Conservation Service.

About 53,059 acres, or nearly 11 percent of the survey area, meets the requirement for prime farmland. This acreage is scattered throughout the survey area, but most of it is in general soil map units 3 and 5. About 95 percent of this prime farmland is used for crops and pasture. The rest is rangeland. The main crops grown are wheat, barley, and alfalfa hay in the nonirrigated areas and wheat, barley, potatoes, alfalfa hay, and grass for pasture in the irrigated areas. The major irrigated areas are north of Pocatello and in the Downey, Arimo, and Robin areas.

A recent trend in land use in the Pocatello and Lava Hot Springs areas has been the loss of prime farmland to urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, are more difficult to manage, and generally are less productive.

The following map units meet the soil requirements for prime farmland. On some soils included in the list, measures have been used to overcome a hazard or limitation, such as flooding, wetness, or droughtiness. Those that require irrigation to be prime farmland are preceded by an asterisk. The location of each map unit is shown on the detailed soil maps at the back of this publication. Soil qualities that affect use and management are described in the section "Detailed Soil Map Units." This list does not constitute a recommendation for a particular land use.

1	Arbone silt loam, 1 to 4 percent slopes
6	Arimo silt loam, 0 to 3 percent slopes
*7	Bahem silt loam, 0 to 2 percent slopes
*8	Bahem silt loam, 2 to 4 percent slopes
*21	Broxon silt loam, 0 to 2 percent slopes
*22	Broxon silt loam, 2 to 4 percent slopes
*42	Downey-Arimo complex, 0 to 3 percent slopes
*52	Holmes gravelly loam, 1 to 4 percent slopes
57	Inkom silt loam, drained, 0 to 1 percent slopes
62	Joes silt loam, 1 to 4 percent slopes
64	Joevar silt loam, 0 to 3 percent slopes
65	Lanoak silt loam, 1 to 4 percent slopes
*77	McDole-McDole Variant complex, 0 to 2 percent slopes
*87	Pocatello silt loam, 1 to 4 percent slopes
93	Rexburg silt loam, 1 to 4 percent slopes
97	Ririe silt loam, 1 to 4 percent slopes
122	Wursten gravelly silt loam, 1 to 4 percent slopes

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help avoid soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as rangeland and woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreation facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Crops and Pasture

By David L. Curtis, district conservationist, Soil Conservation Service

General management needed for crops and pasture is suggested in this section. The crops or pasture plants best suited to the soils, including some not commonly grown in the survey area, are identified; the system of land capability classification used by the Soil Conservation Service is explained; and the estimated yields of the main crops and hay and pasture plants are listed for each soil.

The survey area has about 181,885 acres of cropland, hayland, and pastureland. Of this, about 127,085 acres is nonirrigated cropland, about 37,850 acres is irrigated cropland, and about 16,950 acres is hayland and pastureland. Most of the farms and ranches in the area have a combination farming and livestock operation.

Field crops suited to the soils and climate of the nonirrigated part of the survey area include wheat and barley. A small amount of alfalfa is grown for hay, but yields are limited by the shortage of available moisture during the summer. The main crops produced in the irrigated areas are potatoes, wheat, and barley. The farmers that have livestock also raise alfalfa hay and pasture.

About 8,155 acres of the hayland and pasture is wet and semiwet meadow areas. The majority of these areas are located along Marsh Creek, the Portneuf River, and Swan Lake. Soils that are representative of the soils in these areas are Bear Lake, Bear Lake Variant, Downata, and Tendoy soils.

The cropping sequence on the majority of the nonirrigated cropland is a summer fallow-wheat rotation. Another rotation that is used is a three-year rotation of winter wheat followed by spring wheat or barley and then summer fallow. Recently, annual cropping has become more popular, especially in the areas of higher precipitation.

Loss of the surface layer through erosion is a serious problem on the gently sloping to moderately steep cropland soils. Productivity is reduced as the surface layer is lost and part of the subsoil is incorporated into the plow layer. Loss of the surface layer is especially critical on soils, such as those of the Arbone, Pocatello, Ririe, and Watercanyon series, that have alkaline layers near the surface. Soil eroded from areas of cropland results in sediment entering streams, reducing the quality of water for municipal use, for recreation, and for fish and wildlife.

Erosion control measures are designed to provide a protective cover for the soil surface, to reduce runoff, and to increase water infiltration. A cropping system that keeps plant cover on the soil surface reduces soil erosion losses to amounts that do not reduce the productive capacity of the soils. Grasses and legumes included in the crop rotation help to control soil erosion and maintain soil fertility and tilth. Soils with good tilth are granular and porous and have a high water infiltration rate. Minimum tillage and no-till practices help to reduce soil compaction and maintain soil tilth. Maintaining a minimum of 1,500 pounds of crop residue per acre on the soil surface at planting time also increases infiltration and reduces runoff and soil erosion.

Terraces and diversions reduce the length of slopes which helps reduce runoff and soil erosion. They are most practical on very deep, well drained soils that have uniform slopes of as much as about 12 to 15 percent. Soils such as the Arbone, Rexburg, Ririe, Lanoak, and Bancroft soils are suitable for terraces and diversions. Contour farming, cross-slope farming, divided-slope farming, and stripcropping are also soil erosion control practices that are suitable for use in the survey area.

Information on the design of soil erosion control measures for each kind of soil is available in local offices of the Soil Conservation Service.

Irrigation water is supplied from local streams, ponds, wells, and irrigation company canals. Sprinkler irrigation is the most widely used method of applying water on the irrigated cropland. Surface irrigation is the most widely used method of applying water on pastureland and the meadowland along Marsh Creek. Applications of irrigation water should be adjusted to the available water capacity of the soil, the water intake rate, and the crop needs.

Soil drainage and protection from flooding are the major management needs on only a small percentage of the acreage in the survey area used for crops, meadow hay, and pasture. Soils such at the Bear Lake, Bear Lake Variant, Downata, Inkom, and Tendoy soils have a seasonal high water table or are subject to flooding.

Most of the soils in the survey area that are used for crops have a silt loam surface layer that has a low to moderate content of organic matter. Regular additions of crop residue and manure, if available, can help to maintain or increase the organic matter content of the soil and help to improve soil structure. Soils that have adequate organic matter content and good structure have good tilth, a high available water capacity, and a good water intake rate.

Crops, hay, and pasture will generally respond to applications of fertilizer. Potatoes, wheat, barley, and grass for pasture will respond to applications of nitrogen fertilizer. Phosphorus is beneficial for legumes, especially on irrigated soils. Much heavier rates of application of fertilizer should be used on irrigated soils than on nonirrigated soils. On all soils, the addition of fertilizer should be based on the results of soil tests, the need of the crop grown, and the expected level of yields. On nonirrigated soils, the available moisture content should also be considered in determining the rate of fertilizer application. A good fertilization program is essential for high production.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under "Detailed Soil Map Units." Specific information can be obtained from the local office of the Soil Conservation Service or the Cooperative Extension Service.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 5. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green-manure crops; and harvesting that insures the smallest possible loss.

For yields of irrigated crops, it is assumed that the irrigation system is adapted to the soils and to the crops grown, that good quality irrigation water is uniformly applied as needed, and that tillage is kept to a minimum.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 5 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Soil Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops (*16*). Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The grouping does not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor does it consider possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for woodland, and for engineering purposes.

In the capability system, soils are generally grouped at three levels: capability class, subclass, and unit. Only class and subclass are used in this survey. These levels are defined in the following paragraphs.

Capability classes, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class V soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, IIe. The letter *e* shows that the main limitation is risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class I there are no subclasses because the soils of this class have few limitations. Class V contains only the subclasses indicated by *w, s,* or *c* because the soils in class V are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, woodland, wildlife habitat, or recreation.

The capability classification of each map unit is given in the section "Detailed Soil Map Units."

Rangeland

By John Davis, range conservationist, Soil Conservation Service

Of the 504,610 acres in this survey area, approximately 55 percent, or 275,862 acres, is noncultivated land used primarily for the production of forage for livestock. About 15 percent, or 74,700 acres, is public land managed by the Bureau of Land Management; 9 percent, or 46,468 acres, is State of Idaho Endowment (school) Land under the management of the Idaho Department of Lands; and 31 percent, or 154,694 acres, is privately owned land. Practically all of this land is classified as rangeland or grazeable woodland.

The most common livestock enterprise is the cow-calf operation. There are also some dairy, purebred beef cattle, and sheep ranches in the area. Some of the federal range is used by operators not based within the survey area.

The forage produced on the rangeland at the lower elevations is used primarily in spring and fall. The forage produced on the grazeable woodland and the rangeland above 5,800 feet elevation is used in summer.

The native vegetation in many areas of rangeland at lower elevations has been severely depleted by excessive use in the past. Even when protected from grazing, the more desirable native plants are very slow to increase because of the low precipitation in the area. The productivity of these desirable native plants is one-third to one-half of the amount originally produced.

The areas of rangeland and grazeable woodland at the higher elevations are not so severely depleted as those at the lower elevations. The production in these areas varies from one-half to three-fourths of the amount originally produced. If properly managed, this land will return more rapidly to the near-original production and composition because it receives more precipitation than does the land at the lower elevations.

In areas that have similar climate and topography, differences in the kind and amount of vegetation produced on rangeland are closely related to the kind of soil. Effective management is based on the relationship between the soils and vegetation and water.

Table 6 shows, for each soil, the range site; the total annual production of vegetation in favorable, normal, and unfavorable years; the characteristic vegetation; and the average percentage of each species. Only those soils that are used as rangeland or are suited to use as rangeland are listed. Explanation of the column headings in table 6 follows.

A *range site* is a distinctive kind of rangeland that produces a characteristic natural plant community that differs from natural plant communities on other range sites in kind, amount, and proportion of range plants. The relationship between soils and vegetation was established during this survey; thus, range sites generally can be determined directly from the soil map. Soil properties that affect moisture supply and plant nutrients have the greatest influence on the productivity of range plants. Soil reaction, salt content, and a seasonal water table are also important.

Each range site is named using general soil or topographic connotations and mean annual precipitation. This is followed by a range site number to identify the range site in lieu of its name. These numbers are used primarily to coordinate range sites within and between states. *011BY003I* is an example of such a number. This describes the range site as located in major land resource area *011*, subdivision *B* (if there is no subdivision, an *X* will appear in this space). Some states make a further subdivision of their resource areas. Because Idaho does not, a *Y* will always appear in the range site name. The *003* is the coordinated range site number. The letter *I* represents the State of Idaho. Land resource area subdivision maps are available in local offices of the Soil Conservation Service.

Total production is the amount of vegetation that can be expected to grow annually on well managed rangeland that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's growth of leaves, twigs, and fruits of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation for favorable, normal, and unfavorable years. In a favorable year, the amount and distribution of precipitation and the temperatures make growing conditions substantially better than average. In a normal year, growing conditions are about average. In an unfavorable year, growing conditions are well below average, generally because of low available soil moisture.

Dry weight is the total annual yield per acre of air-dry vegetation. The relationship of green weight to air-dry weight varies according to such factors as exposure, amount of shade, recent rains, and unseasonable dry periods. All herbage utilized or unutilized by livestock and wildlife is included. The amount that can be used as forage depends on the kinds of grazing animals and the season when the forage is grazed.

Characteristic vegetation—the grasses, forbs, and shrubs that make up most of the potential natural plant community on each soil—is listed by common name. Under *composition*, the expected percentage of the total annual production is given for each species making up the characteristic vegetation.

Range management requires a knowledge of the kinds of soil and of the potential natural plant community. It also requires an evaluation of the present range condition. Range condition is determined by comparing the present plant community with the potential natural plant community on a particular range site. The more closely the existing community resembles the potential community, the better the range condition. Range condition is an ecological rating only. It does not have a specific meaning that pertains to the present plant community in a given use.

The objective in range management is to control grazing so that the plants growing on a site are about the same in kind and amount as the potential natural plant community for that site. Such management generally results in the optimum production of vegetation, reduction of undesirable brush species, conservation of water, and control of erosion. Sometimes, however, a range condition somewhat below the potential meets grazing needs, provides wildlife habitat, and protects soil and water resources.

Woodland Management and Productivity

The woodland resource in the survey area is in the more mountainous parts of the area. The location, extent, and species composition of the woodland areas are directly related to the actual and effective precipitation received. Aspect and elevation are the main factors that influence precipitation.

At the lower elevations, about 5,500 feet, quaking aspen and Douglas-fir are restricted to concave, north- and east-facing side slopes. With an increase in elevation and the related increase in precipitation, quaking aspen and Douglas-fir spread to cover nearly all of the north- and east-facing side slopes. At about 6,000 feet, quaking aspen and Douglas-fir are on concave, south- and west-facing side slopes and lodgepole pine and subalpine fir are on the concave, north- and east-facing side slopes. Above 6,500 feet, there are moderately extensive stands of timber; Douglas-fir occupies the slightly drier and warmer, convex positions, and lodgepole pine and subalpine fir occupy the cooler and more moist, concave positions.

The more extensive areas of woodland in the survey area are (1) the Buckskin area, east of Pocatello, (2) the Garden Creek and Big Onion area, along the western boundary of the survey area, and (3) the Cottonwood area, east of Downey and south of Lava Hot Springs. The Cottonwood area is the most extensive of the timbered areas.

In the early development of the area, the woodland provided lumber for local construction, posts and poles for fences, firewood, and a considerable quantity of railroad ties. There is still some logging taking place, but it is severely limited by the distance to sawmills or pole plants. The locally grown timber, at present, is used mainly for firewood.

Most of the woodland acreage is on steep erodible soils. Logging roads and skid trails must be carefully planned and constructed to provide adequate drainage and prevent excessive soil erosion. Upon completion of timber harvesting, roads, skid trails, and landings should be provided with water bars and seeded to adapted plant species.

The map unit descriptions in the section "Detailed Soil Map Units" provide a brief discussion of soil-, harvesting-, and production-related limitations. Maximum average annual growth, expressed in cubic feet per acre, is also given for one or more tree species. These growth figures are based on data from yield tables and are ascertained by using the average site indexes. The site indexes are determined by using the appropriate site index curves (*1, 2, 5, 6, 7, 10*) for each tree species. For Douglas-fir, the site indexes obtained from Brikell's curves have been converted to a 100-year base so that Meyer's yield tables could be used to determine growth. The growth figures, when more than one species is given for a soil, are not cumulative. Instead they represent the potential maximum average annual growth, assuming that only one tree species is present.

Table 7 can be used by woodland owners or forest managers in planning the use of soils for wood crops. Only those soils suitable for wood crops are listed. The table lists the ordination (woodland suitability) symbol for each soil. Soils assigned the same ordination symbol require the same general management and have about the same potential productivity.

The first part of the ordination symbol, a number, indicates the potential productivity in cubic meters of wood per hectare per year for important tree species. One cubic meter per hectare is equal to 14.3 cubic feet per acre. Yields in the map unit descriptions in the section "Detailed Soil Map Units" are given in cubic feet per acre per year.

The second part of the symbol, a capital letter, indicates the major kind of soil or physiographic characteristic that contributes to important hazards or limitations in management. The letter *R* indicates steep slopes; *X*, stoniness or rockiness; *W*, excessive water in or on the soil; *T*, toxic substances in the soil; *D*, restricted rooting depth; *C*, clay in the upper part of the soil; *S*, sandy texture; *F*, high content of rock fragments in the soil profile. The letter *A* indicates that limitations or restrictions are insignificant. Some kinds of soil may have more than one limiting characteristic, but only one symbol will be used. The priority rating is as follows: R, X, W, T, D, C, S, and F.

In table 7, *slight, moderate,* and *severe* indicate the degree of the major soil limitations to be considered in management.

Ratings of *equipment limitation* reflect the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. A rating of *slight* indicates that use of equipment is not limited to a particular kind of equipment or time of year; *moderate* indicates a short seasonal limitation or a need for some modification in management or in equipment; and *severe* indicates a seasonal limitation, a need for special equipment or management, or a hazard in the use of equipment.

Seedling mortality ratings indicate the degree to which the soil affects the mortality of tree seedlings. Plant competition is not considered in the ratings. The ratings apply to seedlings from good stock that are properly planted during a period of sufficient rainfall. A rating of *slight* indicates that the expected mortality is less than 25 percent; *moderate*, 25 to 50 percent; and *severe*, more than 50 percent.

Ratings of *windthrow hazard* are based on soil characteristics that affect the development of tree roots and the ability of the soil to hold trees firmly. A rating of *slight* indicates that few trees may be blown down by strong winds; *moderate*, that some trees will be blown down during periods of excessive soil wetness and strong winds; and *severe*, that many trees are blown down during periods of excessive soil wetness and moderate or strong winds.

Ratings of *plant competition* indicate the degree to which undesirable plants are expected to invade where there are openings in the tree canopy. The invading plants compete with native plants or planted seedlings. A rating of *slight* indicates little or no competition from other plants; *moderate* indicates that plant competition is expected to hinder the development of a fully stocked stand of desirable trees; *severe* indicates that plant competition is expected to prevent the establishment of a desirable stand unless the site is intensively prepared, weeded, or otherwise managed to control undesirable plants.

The *potential productivity* of merchantable or *common trees* on a soil is expressed as a *site index*. This index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

Trees to plant are those that are suited to the soils and to commercial wood production.

Woodland Understory Vegetation

Understory vegetation consists of grasses, forbs, shrubs, and other plants. Some woodland, if well managed, can produce enough understory vegetation to support grazing of livestock or wildlife, or both, without damage to the trees.

The quantity and quality of understory vegetation vary with the kind of soil, the age and kind of trees in the canopy, the density of the canopy, and the depth and condition of the litter. The density of the canopy determines the amount of light that understory plants receive.

Table 8 shows, for each soil suitable for woodland use, the potential for producing understory vegetation. The *total production* of understory vegetation includes the herbaceous plants and the leaves, twigs, and fruit of woody plants up to a height of 4 1/2 feet. It is expressed in pounds per acre of air-dry vegetation in favorable, normal, and unfavorable years. In a favorable year, the amount and distribution of precipitation and the temperatures make growing conditions substantially better than average. In a normal year, growing conditions are about average. In an unfavorable year, growing conditions are well below average, generally because of low available soil moisture.

Table 8 also lists the common names of the *characteristic vegetation* on each soil and the percentage *composition*, by air-dry weight, of each kind of plant. The table shows the kind and percentage of understory plants expected under a canopy density that is most nearly typical of woodland in which the production of wood crops is highest.

Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, and yards from wind and snow. They also protect fruit trees and gardens, and they furnish habitat for wildlife. Several rows of low- and high-growing broadleaf and coniferous trees and shrubs provide the most protection.

Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil. Field windbreaks protect cropland and crops from wind, hold snow on the fields, and provide food and cover for wildlife.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To insure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition. The plants should be irrigated for at least the first two summers after planting.

Table 9 shows the height that locally grown trees and shrubs are expected to reach in 20 years on various soils under irrigation. The estimates in table 9 are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Some of the trees and shrubs listed in the table will grow without irrigation but growth will be reduced. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from local offices of the Soil Conservation Service or the Cooperative Extension Service or from a nursery.

Recreation

The survey area provides many opportunities for year-round outdoor recreation. These include hunting, fishing, swimming, camping, hiking, and winter sports.

The farmland areas provide good hunting for upland game birds such as ring-necked pheasant and Hungarian partridge. Mule deer and grouse hunting is good in the mountains and foothills. Waterfowl are plentiful along Marsh Creek, the Portneuf River, and Swan Lake.

The Portneuf River provides good fishing for rainbow, brown, and cutthroat trout. Some of the smaller tributary streams have rainbow and eastern brook trout. Hawkins and Wiregrass Reservoirs provide very good fishing for rainbow trout, especially early in summer.

Natural hot springs provide hot water for hot pools and swimming pools at Lava Hot Springs and a swimming pool at Downata. There are several private campgrounds within the survey area and several public campgrounds just outside the area.

There are two downhill skiing areas—Caribou, which is just east of Pocatello, and Pebble Creek, which is east of Inkom, just outside the survey area. Most of the survey area offers opportunities for snowmobiling and cross-country skiing.

The soils of the survey area are rated in table 10 according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewerlines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreation use by the duration and intensity of flooding and the season when flooding occurs. In planning recreation facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In table 10, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or by a combination of these measures.

The information in table 10 can be supplemented by other information in this survey, for example, interpretations for dwellings without basements and for local roads and streets in table 12 and interpretations for septic tank absorption fields in table 13.

Camp areas require site preparation such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have mild slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. the best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes or stones or boulders that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones and boulders, is firm after rains, and is not dusty when dry. If grading is needed, the depth of the soil over bedrock or a hardpan should be considered.

Paths and trails for hiking, horseback riding, and bicycling should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

Wildlife Habitat

By Mike W. Anderson, biologist, Soil Conservation Service

The survey area supports many kinds of wildlife. The areas of woodland, rangeland, cultivated fields, and water provide food and cover for many mammals, birds, and fish.

Mule deer are the most abundant of the big game animals, but there are also some elk and a few moose. Beaver, mink, muskrat, and other furbearers live along the streams and in the marshes.

Waterfowl use the meadows and marshes and the Portneuf River and Marsh Creek during the migration and nesting seasons, and they feed in nearby fields. Approximately 9,000 acres of wetland provides habitat for Canada goose, mallard, pintail, gadwall, redhead, American wigeon, green-winged teal, blue-winged teal, and cinnamon teal. Numerous less common waterfowl species, shore birds, and other water-loving birds also live in and use these areas.

The survey area offers a good variety of upland game species that use almost all of the different habitat types in the area. Some species, such as the pheasant and mourning dove, are closely associated with the private farmlands; others, such as the sage grouse, Hungarian partridge, sharp-tailed grouse, and rabbits, are more dependent on the rangeland. Ruffed grouse and blue grouse are in areas of forest land.

The wildlife population is largely determined by the suitability of the habitat; that is, the supply of food, cover, and water. Habitats differ in their capacity to provide these essential needs. Some of these differences are because of the characteristics of the soils, and others are a result of management. To improve the habitat for wildlife, good management practices are needed. They should be integrated with other uses of the soils.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 11, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. These ratings are for either irrigated or nonirrigated conditions, based on the major use of the soil. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flood hazard. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flood hazard, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are fescue, wheatgrass, bromegrass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flood hazard. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are bluegrass, goldenrod, beggarweed, wheatgrass, and wildrye.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, fir, and juniper.

Shrubs are bushy woody plants that produce fruit, buds, twigs, bark, and foliage. Soil properties and features that affect the growth of shrubs are depth of the root zone, available water capacity, salinity, and soil moisture. Examples of shrubs are mountainmahogany, bitterbrush, snowberry, and big sagebrush.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, saltgrass, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. The wildlife attracted to these areas include Hungarian partridge, ring-necked pheasant, meadowlark, mourning dove, coyote, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of deciduous plants or coniferous plants or both and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include ruffed grouse, blue grouse, owl, woodpecker, squirrel, elk, deer, and bear.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, sandhill crane, shore birds, muskrat, mink, and beaver.

Habitat for rangeland wildlife consists of areas of shrubs and wild herbaceous plants. Wildlife attracted to rangeland include coyote, mule deer, jackrabbit, sage grouse, meadowlark, and sharp-tailed grouse.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. The ratings are given in the following tables: Building site development, Sanitary facilities, Construction materials, and Water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations need to be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to (1) evaluate the potential of areas for residential, commercial, industrial, and recreation uses; (2) make preliminary estimates of construction conditions; (3) evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; (4) evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; (5) plan detailed onsite investigations of soils and geology; (6) locate potential sources of gravel, sand, earthfill, and topsoil; (7) plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and (8) predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Table 12 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock, a cemented pan, or a very firm dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and the depth to the water table.

Dwellings and small commercial buildings are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrink-swell potential, and organic layers can cause the movement of footings. A high water table, depth to bedrock or to a cemented pan, large stones, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 to 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material, a base of gravel, crushed rock, or stabilized soil material, and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock or to a cemented pan, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, frost action potential, and depth to a high water table affect the traffic supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, depth to bedrock or to a cemented pan, the available water capacity in the upper 40 inches, and the content of salts, sodium, and sulfidic materials affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

Table 13 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Table 13 also shows the suitability of the soils for use as daily cover for landfills. A rating of *good* indicates that soil properties and site features are favorable for the use and good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock or to a cemented pan, and flooding affect absorption of the effluent. Large stones and bedrock or a cemented pan interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

Table 13 gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, depth to bedrock or to a cemented pan, flooding, large stones, and content of organic matter.

Excessive seepage because of rapid permeability of the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground water pollution. Ease of excavation and revegetation needs to be considered.

The ratings in table 13 are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock or to a cemented pan, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium affect trench type landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area type sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to wind erosion.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 14 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a probable or improbable source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet, and the depth to the water table is less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and gravel are natural aggregates suitable for commercial use with a minimum of processing. Sand and gravel are used in many kinds of construction. Specifications for each use vary widely. In table 14, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel, stones, or soluble salts, have slopes of more than 15 percent, or have a seasonal water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 15 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas and embankments, dikes, and levees. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives for each soil the restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and potential frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, or sulfur. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or to a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to reduce erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock or to a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or to a cemented pan affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts or sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

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Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features listed in tables are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classifications, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Table 16 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under "Soil Series and Their Morphology."

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as 15 percent, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (*4, 11*) and the system adopted by the American Association of State Highway and Transportation Officials (*3*).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

Rock fragments larger than 3 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

Table 17 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under "Soil Series and Their Morphology."

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, and plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earth-moving operations.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of downward movement of water when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems, septic tank absorption fields, and construction where the rate of water movement under saturated conditions affects behavior.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each major soil layer. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of the soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The change is based on the soil fraction less than 2 millimeters in diameter. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, greater than 9 percent, is sometimes used.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, very fine sand, sand, and organic matter (up to 4 percent) and on soil structure and permeability. The estimates are modified by the presence of rock fragments. Values of K range from 0.02 to 0.69. The higher the value the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their resistance to wind erosion in cultivated areas. The groups indicate the susceptibility of soil to wind erosion and the amount of soil lost. Soils are grouped according to the amount of stable aggregates 0.84 millimeters in size. These are represented idealistically by USDA textural classes. Soils containing rock fragments can occur in any group.

1. Sands, fine sands, and very fine sands. These soils are generally not suitable for crops. They are extremely erodible, and vegetation is difficult to establish.

2. Loamy sands, loamy fine sands, and loamy very fine sands. these soils are very highly erodible. Crops can be grown if intensive measures to control wind erosion are used.

3. Sandy loams, coarse sandy loams, fine sandy loams, and very fine sandy loams. These soils are highly erodible. Crops can be grown if intensive measures to control wind erosion are used.

4L. Calcareous loamy soils that are less than 35 percent clay and more than 5 percent finely divided calcium carbonate. These soils are erodible. Crops can be grown if intensive measures to control wind erosion are used.

4. Clays, silty clays, clay loams, and silty clay loams that are more than 35 percent clay. These soils are moderately erodible. Crops can be grown if measures to control wind erosion are used.

5. Loamy soils that are less than 20 percent clay and less than 5 percent finely divided calcium carbonate and sandy clay loams and sandy clays that are less than 5 percent finely divided calcium carbonate. These soils are slightly erodible. Crops can be grown if measures to control wind erosion are used.

6. Loamy soils that are 20 to 35 percent clay and less than 5 percent finely divided calcium carbonate, except silty clay loams. These soils are very slightly erodible. Crops can easily be grown.

7. Silty clay loams that are less than 35 percent clay and less than 5 percent finely divided calcium carbonate. These soils are very slightly erodible. Crops can easily be grown.

8. Stony or gravelly soils and other soils not subject to wind erosion.

Organic matter is the plant and animal residue in the soil at various stages of decomposition.

In table 17, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter of a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Soil and Water Features

Table 18 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are used to estimate runoff from precipitation. Soils not protected by vegetation are assigned to one of four groups. They are grouped according to the intake of water when the soils are thoroughly wet and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of deep or very deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Flooding, the temporary inundation of an area, is caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, nor is water in swamps and marshes.

Table 18 gives the frequency and duration of flooding and the time of year when flooding is most likely.

Frequency, duration, and probable dates of occurrence are estimated. Frequency is expressed as none, rare, occasional, and frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions; *occasional* that it occurs, on the average, no more than once in 2 years; and *frequent* that it occurs, on the average, more than once in 2 years. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, and *long* if more than 7 days. Probable dates are expressed in months; November-May, for example, means that flooding can occur during the period November through May.

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and absence of distinctive horizons that form in soils that are not subject to flooding.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The depth to a seasonal high water table applies to undrained soils. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles in the soil. Indicated in table 18 are the depth to the seasonal high water table; the kind of water table—that is, perched, artesian, or apparent; and the months of the year that the water table commonly is high. A water table that is seasonally high for less than 1 month is not indicated in the table.

An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil.

Only saturated zones within a depth of about 6 feet are indicated. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. The first numeral in the range indicates how high the water rises above the surface. The second numeral indicates the depth below the surface.

Depth to bedrock is given if bedrock is within a depth of 5 feet. The depth is based on many soil borings and on observations during soil mapping. The rock is specified as either soft or hard. If the rock is soft or fractured, excavations can be made with trenching machines, backhoes, or small rippers. If the rock is hard or massive, blasting or special equipment generally is needed for excavation.

Potential frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured clayey soils that have a high water table in winter are most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage mainly to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors creates a severe corrosion environment. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion is also expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (*17*). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 19 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Ten soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Mollisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Xeroll (*Xer*, meaning dry, plus *oll*, from Mollisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Argixerolls (*Argi*, meaning clay accumulation, plus *xeroll*, the suborder of the Mollisols that have a xeric moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Argixerolls.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Mostly the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is loamy-skeletal, mixed, frigid Typic Argixerolls.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the substratum can differ within a series. An example is the Valmar series.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. The descriptions are arranged in alphabetic order.

Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the *Soil Survey Manual* (*14*). Many of the technical terms used in the descriptions are defined in *Soil Taxonomy* (*17*). Unless otherwise stated, colors in the descriptions are for dry soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section "Detailed Soil Map Units."

Arbone Series

The Arbone series consists of very deep, well drained soils on fan terraces, stream terraces, and mountain foot slopes. These soils formed in mixed alluvium. Slope is 1 to 30 percent. Elevation is 4,500 to 6,000 feet. Average annual precipitation is 12 to 16 inches, and average annual air temperature is 41 to 45 degrees F.

Typical pedon of Arbone silt loam, 4 to 12 percent slopes, about 3.5 miles south of Downey, about 100 feet south and 2,350 feet east of the northwest corner of sec. 14, T. 12 S., R. 37 E.

A1—0 to 9 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and very fine roots; many very fine interstitial pores and few very fine tubular pores; about 5 percent pebbles; mildly alkaline (pH 7.4); abrupt smooth boundary.

B2—9 to 12 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and very fine roots; many very fine interstitial pores and few very fine tubular pores; about 5 percent pebbles; slightly effervescent; mildly alkaline (pH 7.4); clear smooth boundary.

B3ca—12 to 18 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak fine and very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and very fine roots; common fine and very fine tubular pores; about 10 percent pebbles; strongly effervescent; mildly alkaline (pH 7.4); clear smooth boundary.

C1ca—18 to 38 inches; very pale brown (10YR 7/3) silt loam, pale brown (10YR 6/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine and very fine roots; many fine and very fine tubular pores; about 10 percent pebbles; violently effervescent; moderately alkaline (pH 7.9); gradual smooth boundary.

C2ca—38 to 60 inches; very pale brown (10YR 7/3) silt loam, pale brown (10YR 6/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine and very fine roots; many fine and very fine tubular pores; about 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4).

Bedrock is at a depth of 60 inches or more. Secondary lime is at a depth of 12 to 20 inches. The control section is 0 to 30 percent rock fragments. Clay content in the control section averages 13 to 17 percent.

A horizon: Texture is silt loam or gravelly silt loam. Rock fragment content is 0 to 20 percent. Reaction is mildly alkaline or moderately alkaline.

B horizon: Texture is silt loam or gravelly silt loam. Rock fragment content is 0 to 30 percent. The upper part of the horizon is slightly effervescent in some pedons, and the lower part is strongly effervescent. Reaction is mildly alkaline or moderately alkaline.

Cca horizon: Texture is silt loam, loam, or gravelly silt loam. Rock fragment content is 0 to 30 percent. Reaction is mildly alkaline or moderately alkaline.

Arimo Series

The Arimo series consists of very deep, well drained soils on terraces. These soils formed in loess and silty alluvium overlying alluvial gravel and sand of mixed mineralogy. Slope is 0 to 8 percent. Elevation is 4,600 to 4,900 feet. Average annual precipitation is 12 to 16 inches, and average annual air temperature is 42 to 45 degrees F.

Typical pedon of an Arimo silt loam in an area of Downey-Arimo complex, 0 to 3 percent slopes, about 1.5 miles south of the city of Arimo, about 295 feet north and 575 feet east of the southwest corner of sec. 20, T. 10 S., R. 37 E.

A1—0 to 6 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak fine platy structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots and few medium roots; many very fine interstitial pores; about 5 percent pebbles; neutral (pH 7.1); clear smooth boundary.

B2—6 to 18 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak coarse and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and very fine roots and few medium roots; common fine and very fine tubular pores; about 5 percent pebbles; neutral (pH 7.3); abrupt smooth boundary.

C1ca—18 to 33 inches; white (10YR 8/2) silt loam, pale brown (10YR 6/3) moist; massive; slightly hard, firm, slightly sticky and slightly plastic; few medium, fine, and very fine roots; few fine and very fine tubular pores; about 5 percent pebbles; strongly effervescent; moderately alkaline (pH 8.0); abrupt wavy boundary.

IIC2ca—33 to 60 inches; multicolored extremely gravelly coarse sand; alternating and irregular layers of strongly effervescent, weakly cemented material and layers of loose material with thick lime coatings on the undersides of the pebbles; lime content decreases with depth; few fine and very fine roots; about 70 percent pebbles and 5 percent cobbles; moderately alkaline (pH 8.4).

Depth to the IIC horizon is 20 to 40 inches. Secondary lime is at a depth of 8 to 18 inches. Clay content is 10 to 18 percent in the upper part of the control section and 0 to 5 percent in the lower part.

A and B horizons: Rock fragment content is 5 to 15 percent. Reaction is neutral or mildly alkaline.

C horizon: Rock fragment content is 5 to 15 percent. Reaction is mildly alkaline or moderately alkaline.

IIC horizon: Rock fragment content is 65 to 85 percent. Reaction is mildly alkaline or moderately alkaline.

Bahem Series

The Bahem series consists of very deep, well drained soils on terraces. These soils formed in silty alluvium overlying flood-deposited sand, gravel, cobbles, and stones of mixed mineralogy. Slope is 0 to 6 percent.

Elevation is 4,400 to 4,500 feet. Average annual precipitation is 9 to 11 inches, and average annual air temperature is 47 to 49 degrees F.

Typical pedon of Bahem silt loam, 0 to 2 percent slopes, about 3.5 miles west of Chubbuck, about 220 feet north and 1,700 feet west of the southeast corner of sec. 31, T. 5 S., R. 34 E.

Ap—0 to 11 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many fine and very fine interstitial pores; slightly effervescent; mildly alkaline (pH 7.4); clear smooth boundary.

C1—11 to 16 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine and fine tubular and interstitial pores; strongly effervescent; mildly alkaline (pH 7.6); gradual smooth boundary.

C2ca—16 to 19 inches; white (10YR 8/2) silt loam, pale brown (10YR 6/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine tubular pores; violently effervescent; mildly alkaline (pH 7.5); clear smooth boundary.

C3ca—19 to 32 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular and interstitial pores; 10 percent firm cicada krotovinas; violently effervescent; mildly alkaline (pH 7.6); clear smooth boundary.

C4—32 to 49 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; strongly effervescent; mildly alkaline (pH 7.6); abrupt irregular boundary.

IIC5—49 to 60 inches; multicolored extremely cobbly sand; mildly alkaline (pH 7.4).

Depth to the IIC horizon is 40 to 60 inches. Secondary lime is at a depth of 8 to 20 inches. Calcium carbonate equivalent averages 15 to 20 percent. Clay content in the control section is 8 to 18 percent.

C horizon: Texture is silt loam or silt. Reaction is mildly alkaline or moderately alkaline.

IIC horizon: Texture is extremely cobbly sand or extremely stony sand. Rock fragment content is 65 to 85 percent.

Bancroft Series

The Bancroft series consists of very deep, well drained soils on loess-covered fan terraces, foothills, and mountain foot slopes. These soils formed in loess and in silty alluvium derived from loess. Slope is 4 to 30 percent. Elevation is 5,000 to 6,000 feet. Average annual precipitation is 14 to 16 inches, and average annual air temperature is 40 to 45 degrees F.

Typical pedon of Bancroft silt loam, 4 to 12 percent slopes, about 3 miles north and 1 mile west of the town of Swan Lake, about 447 feet north and 1,115 feet west of the southeast corner of sec. 21, T. 10 S., R. 38 E.

Ap—0 to 7 inches; brown (10YR 5/3) silt loam, very dark grayish brown (10YR 3/2) moist; weak coarse and medium subangular blocky structure parting to weak fine granular; hard, very friable, slightly sticky and slightly plastic; many very fine roots; many very fine interstitial pores and common very fine tubular pores; slightly acid (pH 6.2); abrupt smooth boundary.

B21t—7 to 17 inches; brown (10YR 5/3) silty clay loam, very dark grayish brown (10YR 3/2) moist; moderate coarse subangular blocky structure parting to weak fine subangular blocky; extremely hard, friable, sticky and plastic; common very fine roots; many very fine and few fine and medium tubular pores; many thin clay films in pores and on faces of peds; slightly acid (pH 6.4); gradual wavy boundary.

B22t—17 to 23 inches; brown (10YR 5/4) silty clay loam, dark yellowish brown (10YR 3/4) moist; moderate coarse angular blocky structure parting to moderate medium angular blocky; extremely hard, friable, sticky and plastic; few very fine roots; many very fine and few fine and medium tubular pores; many moderately thick clay films in pores and on faces of peds; neutral (pH 6.7); gradual wavy boundary.

B23t—23 to 37 inches; yellowish brown (10YR 5/4) silty clay loam, dark yellowish brown (10YR 4/4) moist; weak coarse angular blocky structure parting to moderate medium and fine angular blocky; extremely hard, firm, sticky and plastic; few very fine roots; many very fine tubular pores; many thin clay films in pores and on faces of peds; about 5 percent hard cicada krotovinas; neutral (pH 7.1); abrupt wavy boundary.

B3ca—37 to 41 inches; light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak coarse angular blocky structure parting to weak medium subangular blocky; extremely hard, firm, slightly sticky and slightly plastic; few very fine roots; many very fine and few fine tubular pores; common thin clay films in pores and on faces of peds; slightly effervescent; neutral (pH 7.3); clear smooth boundary.

C1ca—41 to 58 inches; very pale brown (10YR 7/3) silt loam, yellowish brown (10YR 5/4) moist; massive; extremely hard, firm, slightly sticky and slightly plastic; many very fine and common fine tubular pores; many fine lime seams; violently effervescent; moderately alkaline (pH 7.9); gradual wavy boundary.

C2ca—58 to 60 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/4) moist; massive; hard, firm, slightly sticky and slightly plastic; many very fine and common fine tubular pores; common fine lime seams; strongly effervescent; mildly alkaline (pH 7.8).

Bedrock is at a depth of 60 inches or more. Lime is at a depth of 20 to 40 inches. Clay content in the control section averages 22 to 32 percent.

A horizon: Reaction is slightly acid or neutral.

B2t horizon: Texture is silt loam or silty clay loam. Reaction is slightly acid to mildly alkaline.

Cca horizon: Reaction is mildly alkaline or moderately alkaline.

Banida Series

The Banida series consists of very deep, moderately well drained soils on lake terraces. These soils formed in lake sediment and in alluvium derived from lake sediment. Slope is 0 to 20 percent. Elevation is 4,750 to 5,150 feet. Average annual precipitation is 15 to 18 inches, and average annual air temperature is 43 to 45 degrees F.

Typical pedon of Banida silty clay loam, 0 to 2 percent slopes, about 8 miles east and 6 miles south of Swan Lake, about 1,800 feet west and 1,800 feet north of the southeast corner of sec. 12, T. 14 S., R. 39 E.

Ap1—0 to 6 inches; brown (7.5YR 5/2) silty clay loam, dark brown (7.5YR 3/2) moist; moderate medium granular structure; slightly hard, firm, sticky and plastic; common very fine and fine roots and few coarse roots; few fine and very fine tubular pores; mildly alkaline (pH 7.8); clear smooth boundary.

Ap2—6 to 9 inches; brown (7.5YR 5/2) silty clay, dark reddish gray (5YR 4/2) moist; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots and few coarse roots; few fine and very fine tubular pores; mildly alkaline (pH 7.8); abrupt smooth boundary.

B21—9 to 22 inches; reddish brown (5YR 4/3) silty clay, dark reddish brown (5YR 3/4) moist; weak medium prismatic structure parting to strong fine angular blocky; very hard, very firm, very sticky and very plastic; few fine roots; few fine and very fine tubular pores; common vertical cracks 3/8 to 5/8 inch wide filled with brown (7.5YR 5/2) Ap material; moderately alkaline (pH 7.9); clear wavy boundary.

B22—22 to 29 inches; reddish brown (5YR 5/3) silty clay, reddish brown (5YR 4/4) moist; moderate medium subangular blocky structure; very hard, very firm, very sticky and very plastic; few very fine roots; few fine and very fine tubular pores; common vertical cracks 3/8 to 1 inch wide filled with brown (7.5YR 5/2) Ap material; slightly effervescent; moderately alkaline (pH 8.0); gradual wavy boundary.

B23—29 to 35 inches; reddish brown (5YR 5/3) silty clay, reddish brown (5YR 4/4) moist; moderate medium subangular blocky structure parting to moderate fine angular blocky; very hard, very firm, very sticky and very plastic; few very fine roots; few fine and very fine tubular pores; common vertical cracks 3/8 inch to 1.5 inches wide filled with brown (7.5YR 5/2) Ap material; slightly effervescent; moderately alkaline (pH 8.1); clear smooth boundary.

B3ca—35 to 40 inches; light brown (5YR 6/4) silty clay, brown (5YR 5/4) moist; moderate fine prismatic structure parting to moderate fine subangular blocky; very hard, very firm, very sticky and very plastic; few very fine roots; few fine and very fine tubular pores; few fine lime seams; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Cca—40 to 64 inches; light brown (7.5YR 6/4) silty clay, brown (5YR 5/4) moist; massive; hard, firm, very sticky and very plastic; few fine distinct strong brown (7.5YR 5/6) mottles; few very fine tubular pores; strongly effervescent; moderately alkaline (pH 8.4).

The solum is 26 to 60 inches thick or more. Clay content in the control section averages 40 to 55 percent. Lime is at a depth of 26 to 36 inches.

A horizon: Reaction is mildly alkaline or moderately alkaline.

B horizon: Texture is silty clay or clay. Reaction is mildly alkaline or moderately alkaline.

C horizon: Texture is silty clay or clay. Reaction is mildly alkaline or moderately alkaline.

Bear Lake Series

The Bear Lake series consists of very deep, very poorly drained soils on flood plains and low terraces. The drainage of these soils has been altered in most areas, and it is now poorly drained. These soils formed in silty alluvium derived from mixed sources. Slope is 0 to 1 percent. Elevation is 4,500 to 5,200 feet. Average annual precipitation is 12 to 16 inches, and average annual air temperature is 41 to 45 degrees F.

Typical pedon of a Bear Lake silt loam in an area of Downata-Bear Lake complex, 0 to 1 percent slopes, about 3.5 miles west of Downey, about 2,850 feet west and 350 feet north of the southeast corner of sec. 25, T. 11 S., R. 31 E.

A1g—0 to 12 inches; dark grayish brown (2.5Y 4/2) silt loam, black (N 2/0) moist; weak fine platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many very fine interstitial pores; slightly effervescent; mildly alkaline (pH 7.7); abrupt smooth boundary.
B2cag—12 to 24 inches; light gray (N 6/0) silty clay loam, gray (N 5/0) moist; weak coarse subangular blocky structure; hard, friable, sticky and plastic; many very fine, fine, and medium roots; common very fine tubular pores; strongly effervescent; moderately alkaline (pH 7.9); abrupt smooth boundary.
C1cag—24 to 40 inches; light gray (N 7/0) silty clay loam, gray (N 7/0) moist; massive; hard, friable, sticky and plastic; few very fine and fine roots; common very fine tubular pores; violently effervescent; moderately alkaline (pH 8.0); clear smooth boundary.
C2cag—40 to 60 inches; light gray (N 7/0) silt loam, gray (N 6/0) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; strongly effervescent; mildly alkaline (pH 7.8).

Clay content in the control section averages 24 to 32 percent. Secondary lime is at a depth of 9 to 16 inches.

A horizon: Reaction is mildly alkaline or moderately alkaline.

B horizon: Texture is silty clay loam or silt loam. Reaction is mildly alkaline to strongly alkaline.

C horizon: Texture is silty clay loam or silt loam. Reaction is mildly alkaline to strongly alkaline.

Bear Lake Variant

The Bear Lake Variant consists of poorly drained soils that are moderately deep to paralithic contact and are on flood plains and low terraces. These soils formed in silty alluvium derived from mixed sources. Slope is 0 to 1 percent. Elevation is 5,100 to 5,200 feet. Average annual precipitation is 14 to 16 inches, and average annual air temperature is 41 to 45 degrees F.

Typical pedon of a Bear Lake Variant silt loam in an area of Bear Lake-Bear Lake Variant complex, 0 to 1 percent slopes, about 3.5 miles north of Lava Hot Springs, about 2,350 feet east and 1,700 feet south of the northwest corner of sec. 4, T. 9 S., R. 38 E.

A1g—0 to 5 inches; very dark gray (5Y 3/1) silt loam, black (5Y 2.5/1) moist; weak very fine and fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots and common coarse roots; many very fine tubular and interstitial pores; slightly effervescent; mildly alkaline (pH 7.4); abrupt smooth boundary.
B1g—5 to 9 inches; very dark gray (5Y 3/1) silt loam, black (5Y 2.5/1) moist; weak coarse subangular blocky structure parting to weak fine granular; hard, friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots and common coarse roots; many very fine tubular pores; slightly effervescent; mildly alkaline (pH 7.4); clear smooth boundary.
B2cag—9 to 17 inches; dark gray (5Y 4/1) silt loam, very dark gray (5Y 3/1) moist; weak coarse subangular blocky structure parting to moderate fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots, few medium roots, and common coarse roots; few very fine tubular pores; strongly effervescent; moderately alkaline (pH 7.9); abrupt smooth boundary.
C1cag—17 to 26 inches; gray (5Y 6/1) silt loam, dark gray (5Y 4/1) moist; massive; hard, very friable, slightly sticky and slightly plastic; common very fine roots and few fine, medium, and coarse roots; many very fine, common fine, and few medium tubular pores; violently effervescent; moderately alkaline (pH 8.3); clear wavy boundary.
C2cag—26 to 33 inches; light olive gray (5Y 6/2) silt loam, olive gray (5Y 4/2) moist; few fine distinct light olive brown (2.5Y 5/4) mottles, olive brown (2.5Y 4/4) moist; massive; hard, very friable, slightly sticky and slightly plastic; common very fine roots and few fine, medium, and coarse roots; common very fine and fine tubular pores and few medium tubular pores; violently effervescent; moderately alkaline (pH 8.0); clear wavy boundary.
C3cag—33 to 36 inches; dark gray (5Y 4/1) silt loam, black (5Y 2.5/1) moist; massive; hard, very friable, slightly sticky and slightly plastic; common very fine roots and few fine, medium, and coarse roots; many very fine, fine, and medium tubular pores; strongly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.
IIR—36 inches; tufa.

Clay content in the control section averages 18 to 30 percent. Secondary lime is at a depth of 8 to 16 inches. Paralithic contact is at a depth of 20 to 40 inches.

A horizon: Reaction is mildly alkaline or moderately alkaline.

B horizon: Texture is silt loam or silty clay loam. Reaction is mildly alkaline or moderately alkaline.

C horizon: Reaction is moderately alkaline or strongly alkaline.

Beaverdam Series

The Beaverdam series consists of very deep, well drained soils on mountainsides. These soils formed in alluvium derived from various kinds of rock, dominantly sandstone and quartzite. Slope is 30 to 60 percent. Elevation is 5,500 to 7,500 feet. Average annual precipitation is 22 to 30 inches, and average annual air temperature is 36 to 42 degrees F.

Typical pedon of a Beaverdam silt loam in an area of Sedgway-Beaverdam complex, 30 to 60 percent slopes, about 6 miles southwest of Lava Hot Springs, about 1,080 feet north and 2,140 feet west of the southeast corner of sec. 30, T. 10 S., R. 38 E.

O1—1.5 inches to 1 inch; undecomposed needles, leaves, twigs, and grass.

O2—1 inch to 0; decomposed and partly decomposed needles, leaves, twigs, and grass.

A1—0 to 3 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine interstitial pores; about 5 percent pebbles and cobbles; slightly acid (pH 6.4); abrupt smooth boundary.

A3—3 to 12 inches; brown (10YR 5/3) silt loam, very dark grayish brown (10YR 3/2) moist; weak medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine and fine tubular pores; about 5 percent pebbles and cobbles; medium acid (pH 6.0); clear smooth boundary.

B21t—12 to 19 inches; light yellowish brown (10YR 6/4) silty clay loam, brown (10YR 4/3) moist; strong medium and coarse subangular blocky structure; hard, very firm, very sticky and very plastic; common very fine, fine, and medium roots; common very fine and fine tubular pores and many very fine interstitial pores; many moderately thick clay films on the faces of peds and in pores; about 5 percent pebbles and cobbles; slightly acid (pH 6.3); gradual smooth boundary.

B22t—19 to 45 inches; light yellowish brown (10YR 6/4) silty clay, brown (10YR 4/3) moist; strong medium and coarse angular blocky structure; hard, very firm, very sticky and very plastic; common very fine, fine, and medium roots; many very fine interstitial pores; continuous moderately thick clay films on the faces of peds and in pores; about 5 percent pebbles and cobbles; slightly acid (pH 6.4); clear smooth boundary.

B23t—45 to 65 inches; light yellowish brown (10YR 6/4) silty clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium and coarse subangular blocky structure; hard, friable, sticky and plastic; few very fine and fine roots; few very fine and fine tubular pores; common thin clay films on the faces of peds and in pores; slightly acid (pH 6.1).

Depth to bedrock and thickness of the solum are 60 inches or more. Clay content in the control section averages 35 to 45 percent.

A horizon: The horizon is 0 to 10 percent rock fragments and 15 to 25 percent clay. Reaction is medium acid to neutral.

B2t horizon: Texture is silty clay loam or silty clay. The horizon is 0 to 10 percent rock fragments and 35 to 45 percent clay. Reaction is slightly acid or neutral.

Broadhead Series

The Broadhead series consists of very deep, well drained soils on mountainsides, foothills, and fan terraces. These soils formed in mixed alluvium derived dominantly from quartzite and sandstone. Slope is 4 to 30 percent. Elevation is 5,500 to 7,000 feet. Average annual precipitation is 18 to 22 inches, and average annual air temperature is 41 to 45 degrees F.

Typical pedon of a Broadhead silt loam in an area of Broadhead-Yago complex, 4 to 12 percent slopes, about 8 miles east and 3.5 miles south of Downey, about 1,200 feet south and 600 feet west of the northeast corner of sec. 13, T. 12 S., R. 38 E.

A11—0 to 2 inches; very dark grayish brown (10YR 3/2) silt loam, very dark brown (10YR 2/2) moist; moderate medium and fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots and few coarse roots; common very fine and fine tubular pores and many very fine interstitial pores; a trace of pebbles; medium acid (pH 5.9); abrupt smooth boundary.

A12—2 to 9 inches; very dark grayish brown (10YR 3/2) silty clay loam, very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure parting to moderate fine subangular blocky; hard, firm, sticky and plastic; many very fine and fine roots and common medium, and coarse roots; many very fine and fine and common medium tubular pores; trace of pebbles; slightly acid (pH 6.1); clear smooth boundary.

B21t—9 to 17 inches; dark grayish brown (10YR 4/2) silty clay loam, very dark brown (10YR 2/2) moist; moderate medium prismatic structure parting to strong medium angular blocky; very hard, firm, sticky and plastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine and fine tubular pores; common thin clay films on the faces of peds and in pores; trace of pebbles; slightly acid (pH 6.1); clear wavy boundary.

B22t—17 to 33 inches; brown (10YR 4/3) silty clay loam, very dark grayish brown (10YR 3/2) moist; strong medium prismatic structure; very hard, firm, sticky and plastic; common very fine roots and few fine and medium roots; common very fine tubular pores and common very fine and fine interstitial pores; many moderately thick clay films on the faces of peds and in pores; trace of pebbles; slightly acid (pH 6.1); clear smooth boundary.

B23t—33 to 60 inches; brown (10YR 5/3) silty clay loam, dark brown (10YR 4/3) moist; moderate medium prismatic structure; very hard, firm, sticky and plastic; few very fine and fine roots; common very fine, fine, and medium tubular pores and many very fine interstitial pores; common moderately thick clay films on the faces of peds and in pores; trace of pebbles; slightly acid (pH 6.1).

Depth to bedrock and thickness of the solum are 60 inches or more. Clay content in the control section averages 35 to 50 percent clay. Lime is present below a depth of 40 inches in some pedons.

A horizon: The upper part of the horizon is silt loam and is 15 to 25 percent clay, and the lower part is silt loam or silty clay loam and is 25 to 34 percent clay. The upper part is medium acid or slightly acid, and the lower part is slightly acid or neutral.

B2t horizon: Texture is silty clay loam or silty clay. Clay content is 35 to 50 percent. Rock fragment content is 0 to 10 percent.

Broncho Series

The Broncho series consists of very deep, somewhat excessively drained soils on terraces. These soils formed in alluvium deposited mainly by the ancient Bonneville Flood. Slope is 1 to 20 percent. Elevation is 4,400 to 4,500 feet. Average annual precipitation is 9 to 11 inches, and average annual air temperature is 47 to 50 degrees F.

Typical pedon of Broncho cobbly loam, 1 to 8 percent slopes, about 2 miles north and 3 miles west of Chubbuck, about 660 feet north and 660 feet west of the southeast corner of sec. 30, T. 5 S., R. 34 E.

A1—0 to 6 inches; pale brown (10YR 6/3) cobbly loam, dark brown (10YR 3/3) moist; weak coarse subangular blocky structure parting to weak fine platy; slightly hard, friable, slightly sticky and slightly plastic; many fine and very fine roots; many very fine interstitial pores and common very fine tubular pores; about 20 percent cobbles and 10 percent pebbles; mildly alkaline (pH 7.4); abrupt smooth boundary.

B2—6 to 13 inches; very pale brown (10YR 7/3) cobbly loam, brown (10YR 5/3) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and very fine roots; many very fine tubular pores; about 20 percent cobbles and 10 percent pebbles; slightly effervescent; moderately alkaline (pH 7.9); abrupt irregular boundary.

C1ca—13 to 30 inches; multicolored extremely cobbly coarse sand; single grain; loose, nonsticky and nonplastic; common fine and very fine roots; about 50 percent cobbles and stones and 30 percent pebbles; moderately thick lime coatings on the undersides of rock fragments; strongly effervescent; moderately alkaline (pH 8.3); clear wavy boundary.

IIC2ca—30 to 39 inches; multicolored extremely cobbly coarse sand; single grain; loose, nonsticky and nonplastic; few fine and very fine roots; about 35 percent cobbles and stones and 40 percent pebbles; moderately thick lime coatings on the undersides of rock fragments; strongly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

IIC3—39 to 60 inches; multicolored extremely cobbly coarse sand; single grain; loose, nonsticky and nonplastic; few fine and very fine roots; about 35 percent cobbles and stones and 40 percent pebbles; slightly effervescent; mildly alkaline (pH 7.7).

Depth to the IIC horizon is 10 to 20 inches. The control section is 35 to 85 percent rock fragments. Lime is at a depth of 6 to 17 inches.

A horizon: Texture is cobbly loam or extremely stony loam. Rock fragment content is 15 to 50 percent. Clay content is 10 to 15 percent. Reaction is mildly alkaline or moderately alkaline.

B2 horizon: Texture is cobbly loam or very stony loam. Rock fragment content is 30 to 50 percent. Clay content is 10 to 15 percent. Reaction is mildly alkaline or moderately alkaline.

IIC horizon: Texture is extremely cobbly or extremely stony coarse sand. Rock fragment content is 60 to 85 percent. Reaction is mildly alkaline or moderately alkaline.

Broncho Variant

The Broncho Variant consists of very deep, well drained soils on fan terrace breaks and on side slopes along drainageways. These soils formed in alluvium derived dominantly from sedimentary and metasedimentary rock. Slope is 20 to 50 percent. Elevation is 4,400 to 5,200 feet. Average annual precipitation is 10 to 13 inches, and average annual air temperature is 46 to 49 degrees F.

Typical pedon of a Broncho Variant very gravelly loam in an area of Broncho Variant-Pocatello complex, 20 to 50 percent slopes, about 1 mile east of Pocatello, about 2,315 feet south and 1,525 feet west of the northeast corner of sec. 13, T. 6 S., R. 34 E.

A1—0 to 4 inches; pale brown (10YR 6/3) very gravelly loam, dark brown (10YR 3/3) moist; weak coarse platy structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine roots, common fine roots, and few medium and coarse roots; many very fine tubular and interstitial pores; about 30 percent pebbles and 10 percent cobbles; slightly effervescent; neutral (pH 6.6); clear smooth boundary.

C1ca—4 to 20 inches; very pale brown (10YR 7/3) extremely gravelly loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots and few medium and fine roots; many very fine interstitial pores; about 40 percent pebbles, 20 percent cobbles, and 5 percent stones; rock fragments have thick lime coatings on the undersides; strongly effervescent; neutral (pH 6.8); clear irregular boundary.

B2tcab—20 to 28 inches; brown (7.5YR 5/4) extremely gravelly clay loam, dark brown (7.5YR 4/4) moist; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; few very fine roots; common very fine interstitial pores; many moderately thick clay films on the insides of peds and in pores; evidence indicates a former argillic horizon that has been engulfed by carbonates; about 40 percent pebbles, 20 percent cobbles, and 5 percent stones; rock fragments have thick lime coatings on the undersides; strongly effervescent; neutral (pH 7.2); clear irregular boundary.

C2cab—28 to 60 inches; yellowish brown (10YR 5/4) extremely gravelly sandy loam, dark yellowish brown (10YR 4/6) moist; massive; soft, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine interstitial pores; about 40 percent pebbles, 20 percent cobbles, and 10 percent stones; rock fragments have thick lime coatings on the undersides; strongly effervescent; mildly alkaline (pH 7.4).

The control section is 40 to 75 percent rock fragments. Secondary lime is at a depth of 4 to 8 inches. Bedrock is at a depth of 60 inches or more.

A horizon: The horizon is 35 to 45 percent rock fragments, mostly gravel, and 10 to 20 percent clay. Reaction is neutral or mildly alkaline.

C1 and B2tcab horizons: Texture is extremely gravelly loam, extremely gravelly clay loam, or very gravelly loam. Rock fragment content is 40 to 65 percent. Clay content is 20 to 30 percent. Reaction is neutral to moderately alkaline.

C2cab horizon: Texture is extremely gravelly sandy loam or extremely cobbly sandy loam. Rock fragment content is 60 to 75 percent. Clay content is 5 to 15 percent. Reaction is mildly alkaline or moderately alkaline.

Broxon Series

The Broxon series consists of very deep, well drained soils on terraces. These soils formed in loess and silty alluvium overlying flood-deposited sand, gravel, cobbles, and stones of mixed mineralogy. Slope is 0 to 6 percent. Elevation is 4,400 to 4,500 feet. Average annual precipitation is 9 to 11 inches, and average annual air temperature is 47 to 51 degrees F.

Typical pedon of Broxon silt loam, 0 to 2 percent slopes, about 0.5 mile northwest of Pocatello, about 30 feet south and 1,485 feet east of the northwest corner of sec. 16, T. 6 S., R. 34 E.

Ap—0 to 8 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure parting to weak fine granular; slightly hard, friable, slightly sticky and slightly plastic; few fine and many very fine roots; few very fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.1); abrupt irregular boundary.

C1ca—8 to 16 inches; white (10YR 8/2) silt loam, pale brown (10YR 6/3) moist; weak medium platy structure; slightly hard, friable, slightly sticky and nonplastic; few fine and very fine roots; few fine and very fine tubular pores; violently effervescent; moderately alkaline (pH 7.9); gradual smooth boundary.

C2—16 to 25 inches; pale brown (10YR 6/3) silt loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and few medium roots; common very fine tubular pores; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

IIC3—25 to 60 inches; multicolored extremely stony sand; single grain; loose, nonsticky and nonplastic; common very fine and few fine roots; moderately alkaline (pH 8.2).

Depth to the IIC horizon is 20 to 40 inches. Secondary lime is at a depth of 7 to 15 inches. Clay content in the silty upper part of the control section averages 8 to 18 percent.

A horizon: Reaction is mildly alkaline or moderately alkaline.

C horizon: Texture is silt loam or silt. Reaction is mildly alkaline or moderately alkaline.

IIC horizon: Texture is extremely stony sand or extremely cobbly sand. Rock fragment content is 65 to 85 percent. Reaction is mildly alkaline or moderately alkaline.

Camelback Series

The Camelback series consists of deep and very deep, well drained soils on mountainsides, foothills, and fan terraces. These soils formed in alluvium, colluvium, and residuum derived from sedimentary and metasedimentary rock, dominantly quartzite. Slope is 6 to 60 percent. Elevation is 5,000 to 8,000 feet. Average annual precipitation is 16 to 20 inches, and average annual air temperature is 39 to 43 degrees F.

Typical pedon of a Camelback gravelly silt loam in an area of Valmar-Camelback-Hades complex, 30 to 60 percent slopes, about 6 miles east and 2 miles south of Pocatello, about 30 feet south and 670 feet west of the northeast corner of sec. 12, T. 7 S., R. 35 E.

A11—0 to 3 inches; dark brown (10YR 3/3) gravelly silt loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine, common fine, and few medium roots; many very fine interstitial pores; about 25 percent pebbles; slightly acid (pH 6.4); abrupt smooth boundary.

A12—3 to 12 inches; dark brown (10YR 4/3) gravelly silt loam, very dark brown (10YR 2/2) moist; weak coarse and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, common fine, and few medium roots; many very fine and few fine tubular pores; about 25 percent pebbles; slightly acid (pH 6.4); clear smooth boundary.

A3—12 to 21 inches; dark brown (10YR 4/3) gravelly silt loam, very dark brown (10YR 2/2) moist; weak medium and coarse subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; many very fine and few fine tubular pores; about 30 percent pebbles; slightly acid (pH 6.3); gradual wavy boundary.

B21t—21 to 30 inches; dark brown (10YR 4/3) extremely cobbly silt loam, very dark grayish brown (10YR 3/2) moist; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few fine roots; many very fine tubular pores and few very fine interstitial pores; few thin clay films on faces of peds and in pores; about 5 percent stones, 25 percent cobbles, and 40 percent pebbles; slightly acid (pH 6.2); gradual wavy boundary.

B22t—30 to 42 inches; yellowish brown (10YR 5/4) extremely cobbly silt loam, dark yellowish brown (10YR 3/4) moist; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few fine roots; many very fine tubular pores and few fine interstitial pores; common thin clay films on faces of peds and in pores; about 10 percent stones, 20 percent cobbles, and 40 percent pebbles; slightly acid (pH 6.2); abrupt irregular boundary.

R—42 inches; quartzite.

Depth to bedrock and thickness of the solum are 40 to 60 inches or more.

A horizon: Texture is gravelly silt loam, very cobbly silt loam, or extremely stony silt loam. Clay content is 12 to 18 percent. Rock fragment content is 20 to 45 percent. Reaction is slightly acid or neutral.

B2t horizon: Texture is extremely cobbly silt loam or extremely gravelly silt loam. Clay content is 18 to 27 percent. Rock fragment content is 60 to 80 percent. Reaction is slightly acid or neutral.

Camelback Variant

The Camelback Variant consists of very deep, well drained soils on the upper part of mountainsides. These soils formed in alluvium and colluvium derived from various kinds of sedimentary and metasedimentary rock, dominantly quartzite and sandstone. Slope is 20 to 60 percent. Elevation is 7,000 to 9,200 feet. Average annual precipitation is 18 to 22 inches, and average annual air temperature is 37 to 42 degrees F.

Typical pedon of a Camelback Variant gravelly silt loam in an area of Camelback Variant-Valmar Variant complex, 20 to 60 percent slopes, about 1 mile southeast of Baldy Mountain, about 1,650 feet north and 1,175 feet west of the southeast corner of sec. 19, T. 10 S., R. 39 E.

A11—0 to 4 inches; very dark grayish brown (10YR 3/2) gravelly silt loam, very dark brown (10YR 2/2) moist; weak fine and very fine platy structure parting to weak very fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine and fine interstitial pores and common very fine tubular pores; about 20 percent pebbles and 5 percent cobbles; slightly acid (pH 6.5); abrupt smooth boundary.

A12—4 to 10 inches; dark brown (10YR 3/3) gravelly silt loam, very dark brown (10YR 2/2) moist; weak coarse and medium subangular blocky structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine and fine interstitial pores and common very fine tubular pores; about 25 percent pebbles and 5 percent cobbles; neutral (pH 6.6); abrupt smooth boundary.

B21—10 to 17 inches; yellowish brown (10YR 5/4) very cobbly loam, dark yellowish brown (10YR 4/4) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine and fine interstitial pores and few very fine tubular pores; about 30 percent pebbles and 20 percent cobbles; neutral (pH 6.8); gradual smooth boundary.

B22—17 to 31 inches; yellowish brown (10YR 5/6) very cobbly loam, dark yellowish brown (10YR 4/6) moist; weak fine and very fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine and fine interstitial pores and few very fine tubular pores; about 30 percent pebbles and 30 percent cobbles; slightly acid (pH 6.5); gradual wavy boundary.

B3—31 to 60 inches; yellowish brown (10YR 5/6) extremely cobbly loam, dark yellowish brown (10YR 4/6) moist; weak very fine and fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine and very fine roots and few medium roots; many very fine and fine interstitial pores and few very fine tubular pores; about 20 percent pebbles and 55 percent cobbles; neutral (pH 6.7).

Depth to bedrock and thickness of the solum are 60 inches or more.

A horizon: The horizon is 10 to 20 percent clay and 20 to 30 percent rock fragments. Reaction is slightly acid or neutral.

B horizon: Texture is very cobbly and extremely cobbly loam. The horizon is 10 to 25 percent clay and 50 to 75 percent rock fragments. Reaction is slightly acid or neutral.

Cedarhill Series

The Cedarhill series consists of very deep, well drained soils on mountainsides, ridges, foothills, and terrace breaks. These soils formed in alluvium and colluvium derived from limestone and other related sedimentary and metasedimentary rock. Slope is 12 to 60 percent. Elevation is 4,800 to 7,000 feet. Average annual precipitation is 13 to 18 inches, and average annual air temperature is 41 to 45 degrees F.

Typical pedon of a Cedarhill very cobbly silt loam in an area of Cedarhill-Ririe-Watercanyon complex, 30 to 60 percent slopes, about 4 miles south of Pocatello, about 1,750 feet north and 250 feet east of the southwest corner of sec. 20, T. 7 S., R. 35 E.

A11—0 to 4 inches; brown (10YR 5/3) very cobbly silt loam, very dark grayish brown (10YR 3/2) moist; weak coarse and medium subangular blocky structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; 5 percent stones, 20 percent cobbles, and 15 percent pebbles; many very fine interstitial pores; slightly effervescent; mildly alkaline (pH 7.7); clear smooth boundary.

A12—4 to 9 inches; brown (10YR 5/3) very cobbly silt loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine interstitial pores; 5 percent stones, 20 percent cobbles, and 15 percent pebbles; strongly effervescent; mildly alkaline (pH 7.7); clear wavy boundary.

C1ca—9 to 16 inches; very pale brown (10YR 7/3) very cobbly silt loam, light yellowish brown (10YR 6/4) moist; weak coarse subangular blocky structure; hard, firm, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine tubular pores; 5 percent stones, 20 percent cobbles, and 15 percent pebbles; violently effervescent; mildly alkaline (pH 7.8); gradual wavy boundary.

C2ca—16 to 28 inches; light yellowish brown (10YR 6/4) very cobbly silt loam, dark yellowish brown (10YR 4/4) moist; weak coarse subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; many very fine tubular pores; 5 percent stones, 20 percent cobbles, and 20 percent pebbles; violently effervescent; mildly alkaline (pH 7.8); gradual wavy boundary.

C3—28 to 60 inches; light yellowish brown (10YR 6/4) very cobbly loam, dark yellowish brown (10YR 4/4) moist; massive; hard, firm, slightly sticky and slightly plastic; few very fine, fine, and medium roots; many very fine tubular pores; 5 percent stones, 20 percent cobbles, and 20 percent pebbles; slightly effervescent; moderately alkaline (pH 7.9).

Bedrock is at a depth of 60 inches or more. Secondary lime is at a depth of 7 to 13 inches.

A horizon: Texture is very cobbly silt loam or very gravelly silt loam. Rock fragment content is 40 to 55 percent. Reaction is neutral to moderately alkaline.

Cca horizon: Texture is very cobbly silt loam, extremely cobbly silt loam, or extremely gravelly silt loam. Rock fragment content is 40 to 70 percent. Reaction is mildly alkaline or moderately alkaline.

C horizon: Texture is very cobbly silt loam, very cobbly loam, extremely cobbly silt loam, extremely gravelly silt loam, or extremely gravelly loam. Rock fragment content is 45 to 70 percent. Reaction is mildly alkaline or moderately alkaline.

Coalbank Series

The Coalbank series consists of very deep, well drained soils on mountainsides, foothills, and terraces. These soils formed in alluvium and residuum derived from volcanic ash. Slope is 4 to 50 percent. Elevation is 4,800 to 6,000 feet. Average annual precipitation is 14 to 18 inches, and average annual air temperature is 42 to 45 degrees F.

Typical pedon of Coalbank very fine sandy loam, 4 to 12 percent slopes, about 10 miles west of Arimo, about 2,850 feet north and 1,900 feet west of the southeast corner of sec. 16, T. 10 S., R. 35 E.

A11—0 to 2 inches; brown (10YR 5/3, crushed) very fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium and coarse subangular blocky structure parting to weak very fine granular; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium and coarse roots; many very fine interstitial pores; slightly acid (pH 6.4); abrupt smooth boundary.

A12—2 to 6 inches; brown (10YR 5/3) very fine sandy loam, very dark brown (10YR 2/2) moist; weak coarse and medium subangular blocky structure parting to weak fine subangular blocky; soft, very friable, nonsticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine interstitial pores and few very fine tubular pores; slightly acid (pH 6.4); abrupt smooth boundary.

B21—6 to 15 inches; brown (10YR 5/3) very fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; slightly hard, very friable, nonsticky and slightly plastic; common very fine, fine, medium, and coarse roots; many very fine interstitial pores and common very fine tubular pores; about 1 percent pebbles; slightly acid (pH 6.2); gradual smooth boundary.

B22—15 to 33 inches; brown (10YR 5/3) very fine sandy loam, dark brown (10YR 3/3) moist; weak coarse and medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots and few coarse roots; many very fine tubular and interstitial pores; slightly acid (pH 6.1); abrupt irregular boundary.

C1—33 to 53 inches; light gray (10YR 7/1) very fine sandy loam, gray (10YR 5/1) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine, fine, and medium roots; many very fine interstitial pores; neutral (pH 6.6); gradual wavy boundary.

C2—53 to 60 inches; light gray (5Y 7/1) very fine sandy loam, light olive gray (5Y 6/2) moist; massive; hard, firm, nonsticky and nonplastic; few very fine and fine roots; many very fine interstitial pores; few very fine iron concretions; neutral (pH 6.6).

The solum is 20 to 40 inches thick. Vitric volcanic ash content in the control section averages 65 to 85 percent.

A horizon: Reaction is slightly acid or neutral.

B horizon: Reaction is slightly acid to mildly alkaline.

C horizon: Reaction is neutral to moderately alkaline. Texture is very fine sandy loam or fine sandy loam.

Dateman Series

The Dateman series consists of moderately deep, well drained soils on mountainsides. These soils formed in alluvium, colluvium, and residuum derived dominantly from limestone and dolomite. Slope is 20 to 60 percent. Elevation is 6,000 to 8,000 feet. Average annual precipitation is 20 to 25 inches, and average annual air temperature is 36 to 40 degrees F.

Typical pedon of a Dateman cobbly silt loam in an area of Ireland-Dateman-Pavohroo association, 20 to 60 percent slopes, about 4.5 miles northeast of Lava Hot Springs, about 1,815 feet north and 710 feet west of the southeast corner of sec. 7, T. 9 S., R. 39 E.

O1 and O2—2 inches to 0; undecomposed and partially decomposed needles, twigs, and grass.

A11—0 to 2 inches; dark grayish brown (10YR 4/2) cobbly silt loam, very dark brown (10YR 2/2) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and common fine roots; many very fine and common fine tubular pores; about 15 percent cobbles and 10 percent pebbles; slightly acid (pH 6.1); abrupt wavy boundary.

A12—2 to 9 inches; dark grayish brown (10YR 4/2) cobbly silt loam, very dark brown (10YR 2/2) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few fine roots; common fine tubular pores; about 5 percent stones, 15 percent cobbles, and 5 percent pebbles; neutral (pH 6.9); abrupt wavy boundary.

B2—9 to 17 inches; brown (10YR 5/3) extremely cobbly silt loam, dark brown (10YR 3/3) moist; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few fine roots; common fine tubular pores; about 20 percent stones, 30 percent cobbles, and 15 percent pebbles; mildly alkaline (pH 7.4); clear wavy boundary.

B3—17 to 35 inches; yellowish brown (10YR 5/4) extremely cobbly silt loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few medium roots; few fine tubular pores; 20 percent stones, 35 percent cobbles, and 10 percent pebbles; mildly alkaline (pH 7.7); abrupt irregular boundary.

R—35 inches; fractured dolomite.

Depth to bedrock and thickness of the solum are 30 to 40 inches.

A1 horizon: Rock fragment content is 20 to 30 percent. Reaction is slightly acid or neutral.

B horizon: Rock fragment content is 65 to 70 percent. Reaction is neutral or mildly alkaline.

Downata Series

The Downata series consists of very deep, very poorly drained soils on flood plains and low stream terraces. The drainage of these soils has been altered to poorly drained in most areas. These soils formed in silty alluvium derived from mixed sources. Slope is 0 to 1 percent. Elevation is 4,500 to 4,800 feet. Average annual precipitation is 12 to 16 inches, and average annual air temperature is 41 to 45 degrees F.

Typical pedon of a Downata silt loam in an area of Downata-Bear Lake complex, drained, 0 to 1 percent slopes, about 3.25 miles west of Downey, about 1,400 feet west and 20 feet north of the southeast corner of sec. 25, T. 11 S., R. 36 E.

O—1 inch to 0; undecomposed grass and moss.

A11g—0 to 2 inches; grayish brown (2.5Y 5/2) silt loam, very dark grayish brown (2.5Y 3/2) moist; weak very fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many very fine interstitial pores; strongly effervescent; mildly alkaline (pH 7.7); abrupt wavy boundary.

A12g—2 to 6 inches; grayish brown (2.5Y 5/2) silt loam, very dark grayish brown (2.5Y 3/2) moist; common fine prominent dark yellowish brown (10YR 3/6) mottles; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many very fine interstitial pores; strongly effervescent; mildly alkaline (pH 7.6); abrupt wavy boundary.

B2g—6 to 14 inches; grayish brown (2.5Y 5/2) silt loam, very dark grayish brown (2.5Y 3/2) moist; many fine prominent dark yellowish brown (10YR 3/6) mottles; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many very fine interstitial pores and few fine tubular pores; strongly effervescent; mildly alkaline (pH 7.6); abrupt smooth boundary.

IIA1gb—14 to 20 inches; dark gray (5Y 4/1) silty clay loam, black (5Y 2.5/1) moist; weak coarse subangular blocky structure; hard, friable, sticky and plastic; many very fine roots and common fine and medium roots; common very fine tubular pores; slightly effervescent; mildly alkaline (pH 7.7); clear smooth boundary.

IIB2gb—20 to 30 inches; gray (5Y 5/1) silty clay loam, very dark gray (5Y 3/1) moist; weak coarse subangular blocky structure; hard, friable, sticky and plastic; few very fine and fine roots; many very fine tubular pores; strongly effervescent; moderately alkaline (pH 7.9); abrupt smooth boundary.

IIC1g—30 to 40 inches; light brownish gray (2.5Y 6/2) silty clay loam, dark grayish brown (2.5Y 4/2) moist; weak coarse subangular blocky structure; very hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; violently effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

IIC2g—40 to 60 inches; light gray (N 7/0) silt loam, gray (2.5Y 5/1) moist; weak coarse subangular blocky structure; very hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; violently effervescent; moderately alkaline (pH 7.9).

Clay content in the control section averages 18 to 34 percent. A buried organic horizon 1 inch to 6 inches thick is in some pedons. The mollic epipedon is 24 to 36 inches thick.

A and B horizons: Reaction is mildly alkaline or moderately alkaline.

Buried A and B horizons and IIC horizon: Texture is silt loam or silty clay loam. Reaction is mildly alkaline or moderately alkaline.

Downey Series

The Downey series consists of very deep, well drained soils on terraces. These soils formed in silty alluvium overlying flood-deposited gravel and sand of mixed mineralogy. Slope is 0 to 8 percent. Elevation is 4,600 to 4,900 feet. Average annual precipitation is 12 to 16 inches, and average annual air temperature is 42 to 45 degrees F.

Typical pedon of a Downey gravelly silt loam in an area of Downey-Arimo complex, 0 to 3 percent slopes (fig. 11), about 2 miles west of Downey, about 445 feet south and 830 feet east of the northwest corner of sec. 20, T. 11 S., R. 37 E.

A11—0 to 3 inches; brown (10YR 5/3) gravelly silt loam, very dark grayish brown (10YR 3/2) moist; weak coarse platy structure parting to weak fine granular; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; many very fine interstitial pores; about 15 percent pebbles and a trace of cobbles; neutral (pH 7.0); abrupt smooth boundary.

A12—3 to 12 inches; brown (10YR 5/3) gravelly silt loam, dark brown (10YR 3/3) moist; weak coarse and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and few fine roots; few fine and very fine tubular pores; about 15 percent pebbles and a trace of cobbles; neutral (pH 7.2); abrupt smooth boundary.

C1ca—12 to 17 inches; very pale brown (10YR 7/3) gravelly silt loam, brown (10YR 5/3) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few fine roots; few very fine tubular pores; about 15 percent pebbles and a trace of cobbles; violently effervescent; mildly alkaline (pH 7.7); abrupt wavy boundary.

IIC2ca—17 to 32 inches; multicolored extremely gravelly coarse sand; massive; common very fine roots; about 60 percent pebbles and 15 percent cobbles;

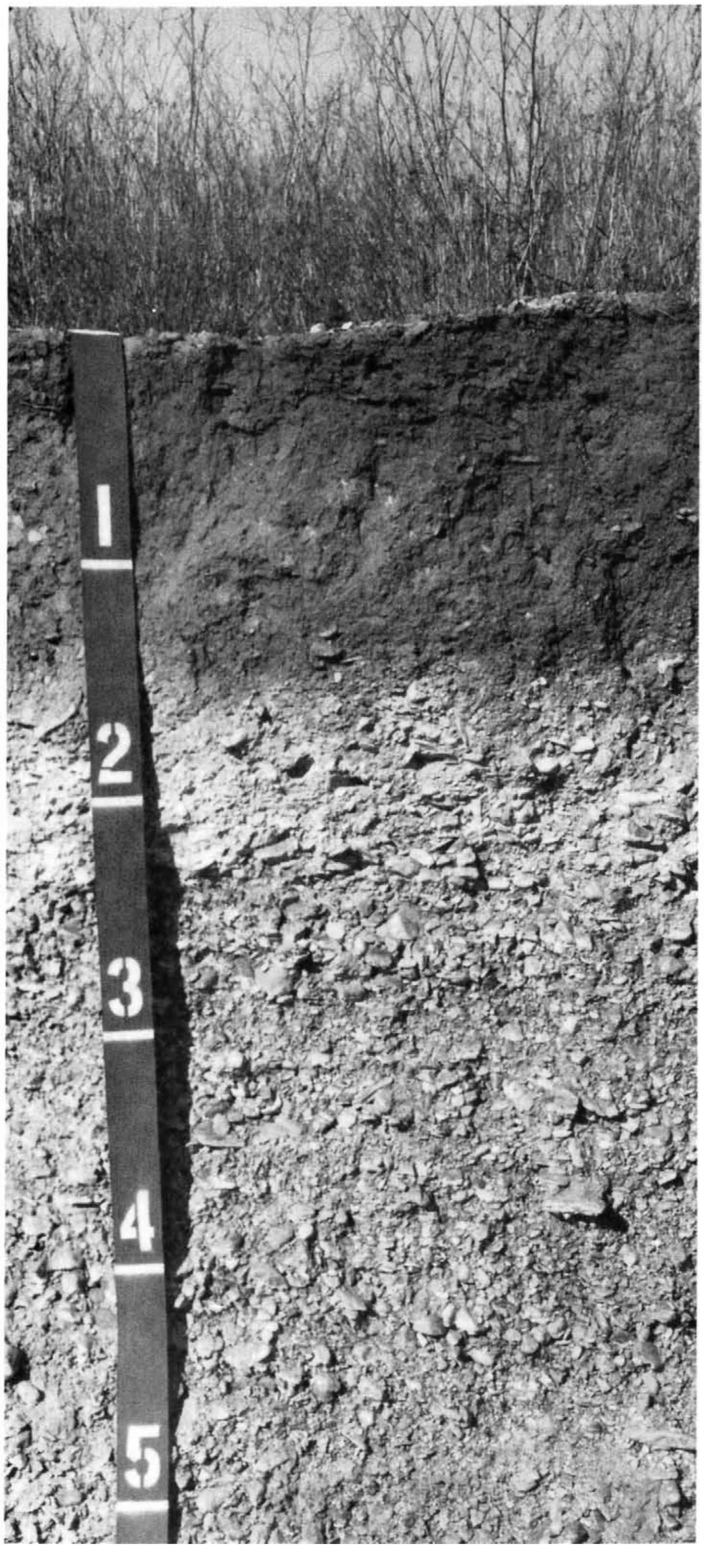

Figure 11.—Profile of Downey gravelly silt loam in an area of Downey-Arimo complex, 0 to 3 percent slopes.

weakly cemented with lime; violently effervescent; moderately alkaline (pH 7.9); gradual wavy boundary.

IIC3ca—32 to 47 inches; multicolored extremely gravelly coarse sand; single grain; alternating and irregular layers of strongly effervescent weakly cemented material and layers of loose material with thick lime coatings on the undersides of the pebbles and cobbles; about 75 percent pebbles and 10 percent cobbles; moderately alkaline (pH 8.2); diffuse irregular boundary.

IIC4ca—47 to 60 inches; multicolored extremely gravelly coarse sand; single grain; about 75 percent pebbles and 10 percent cobbles; thick lime coatings on the undersides of the pebbles and cobbles; moderately alkaline (pH 8.0).

Depth to the IIC horizon is 12 to 20 inches. Secondary lime is at a depth of 8 to 15 inches.

A horizon: Rock fragment content is 15 to 30 percent. Reaction is neutral to moderately alkaline.

C horizon: Rock fragment content is 15 to 30 percent. Reaction is neutral to moderately alkaline.

IIC horizon: Texture is extremely gravelly coarse sand or very gravelly coarse sand. Rock fragment content is 55 to 80 percent. Reaction is mildly alkaline or moderately alkaline. The weakly cemented material slakes in water.

Enochville Series

The Enochville series consists of very deep, poorly drained soils on stream terraces. These soils formed in alluvium derived from mixed sources. Slope is 0 to 1 percent. Elevation is 6,000 to 6,400 feet. Average annual precipitation is 16 to 20 inches, and average annual air temperature is 40 to 42 degrees F.

Typical pedon of an Enochville silt loam in an area of Enochville-Enochville Variant complex, 0 to 1 percent slopes, about 3 miles southeast of Cottonwood Peak, about 100 feet east and 60 feet north of the southwest corner of sec. 16, T. 12 S., R. 39 E.

A11—0 to 2 inches; very dark grayish brown (10YR 3/2) silt loam, very dark brown (10YR 2/2) moist; strong medium granular structure; hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; few very fine tubular pores and many very fine interstitial pores; neutral (pH 6.9); abrupt wavy boundary.

A12—2 to 12 inches; very dark grayish brown (10YR 3/2) silt loam, very dark brown (10YR 2/2) moist; moderate coarse and medium subangular blocky structure parting to moderate medium and fine granular; hard, friable, slightly sticky and slightly plastic; many very fine roots and common fine and medium roots; many very fine tubular pores; neutral (pH 7.0); clear smooth boundary.

IIB2g—12 to 20 inches; dark grayish brown (2.5Y 4/2) silty clay loam, very dark grayish brown (2.5Y 3/2) moist; moderate coarse prismatic structure parting to moderate medium and fine subangular blocky; extremely hard, firm, sticky and plastic; common very fine and fine roots and few fine and medium roots; many very fine tubular pores; mildly alkaline (pH 7.4); abrupt smooth boundary.

IIIC1g—20 to 27 inches; grayish brown (2.5Y 5/2) silt loam, very dark grayish brown (2.5Y 3/2) moist; many medium distinct yellowish brown (10YR 5/8) mottles, yellowish brown (10YR 5/6) moist; massive; extremely hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; many very fine tubular pores; few fine round iron concretions; mildly alkaline (pH 7.7); abrupt wavy boundary.

IIIC2g—27 to 43 inches; grayish brown (2.5Y 5/2) silt loam, very dark grayish brown (2.5Y 3/2) moist; many medium distinct yellowish brown (10YR 5/8) mottles, dark yellowish brown (10YR 3/6) moist; massive; extremely hard, friable, slightly sticky and slightly plastic; many very fine roots, common fine roots, and few medium roots; many very fine tubular pores; moderately alkaline (pH 8.1); abrupt wavy boundary.

IVC3g—43 to 50 inches; pale olive (5Y 6/3) very cobbly sandy loam, olive (5Y 4/3) moist; common medium distinct yellowish brown (10YR 6/6) mottles, dark brownish yellow (10YR 4/6) moist; massive; hard, friable, slightly sticky and slightly plastic; many very fine roots, common fine roots, and few medium roots; many very fine interstitial pores and common fine tubular pores; about 20 percent pebbles, 10 percent cobbles, and 5 percent stones; moderately alkaline (pH 8.2); abrupt wavy boundary.

IVC4g—50 to 60 inches; pale yellow (2.5Y 7/4) extremely cobbly sandy loam, light olive brown (2.5Y 5/4) moist; common medium distinct yellowish brown (10YR 6/6) mottles, dark brownish yellow (10YR 4/6) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine roots; many very fine interstitial pores; about 40 percent pebbles, 25 percent cobbles, and 5 percent stones; mildly alkaline (pH 7.6).

The mollic epipedon is 20 to 37 inches thick. Clay content in the control section averages 20 to 29 percent.

A horizon: Reaction is slightly acid or neutral.

IIB horizon: Texture is silt loam or silty clay loam. Reaction is neutral or mildly alkaline.

IIIC horizon: Texture is silt loam or silty clay loam. Reaction is neutral to moderately alkaline.

IVC horizon: Texture is very cobbly sandy loam or extremely cobbly sandy loam. Rock fragment content is 35 to 70 percent. Reaction is mildly alkaline or moderately alkaline.

Enochville Variant

The Enochville Variant consists of very deep, poorly drained soils on stream terraces. These soils formed in alluvium derived from mixed sources. Slope is 0 to 1 percent. Elevation is 6,000 to 6,400 feet. Average annual precipitation is 16 to 20 inches, and average annual air temperature is 40 to 42 degrees F.

Typical pedon of an Enochville Variant gravelly silt loam in an area of Enochville-Enochville Variant complex, 0 to 1 percent slopes, about 2 miles northeast of Cottonwood Peak, about 1,850 feet east and 130 feet north of the southwest corner of sec. 29, T. 11 S., R. 39 E.

A11g—0 to 3 inches; dark grayish brown (2.5Y 4/2) gravelly silt loam, very dark grayish brown (2.5Y 3/2) moist; weak fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine interstitial and tubular pores; about 10 percent pebbles and 5 percent cobbles; slightly effervescent; neutral (pH 6.7); abrupt smooth boundary.

A12g—3 to 11 inches; dark grayish brown (2.5Y 4/2) gravelly silt loam, very dark grayish brown (2.5Y 3/2) moist; weak coarse subangular blocky structure parting to weak fine and medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots, common fine roots, and few medium and coarse roots; many very fine and fine tubular pores and common medium tubular pores; about 10 percent pebbles and 5 percent cobbles; slightly effervescent; neutral (pH 6.9); clear wavy boundary.

IIA1gb—11 to 18 inches; dark grayish brown (2.5Y 4/2) gravelly silt loam, black (N 2/0) moist; weak coarse angular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots and few fine, medium, and coarse roots; many very fine tubular pores and few fine tubular and interstitial pores; about 10 percent pebbles and 5 percent cobbles; slightly effervescent; neutral (pH 7.1); clear smooth boundary.

IIB2gb—18 to 24 inches; dark grayish brown (2.5Y 4/2) gravelly silt loam, very dark grayish brown (2.5Y 3/2) moist; common medium distinct strong brown (7.5YR 5/6) mottles; weak coarse angular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots and few fine, medium, and coarse roots; many very fine and few fine and medium tubular pores; about 10 percent pebbles and 5 percent cobbles; neutral (pH 7.2); clear wavy boundary.

IIIC1g—24 to 30 inches; grayish brown (2.5Y 5/2) very gravelly loam, very dark grayish brown (2.5Y 3/2) moist; few medium distinct strong brown (7.5YR 5/6) mottles; massive; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; many very fine interstitial pores; about 45 percent pebbles and 5 percent cobbles; slightly acid (pH 6.2); clear wavy boundary.

IIIC2g—30 to 39 inches; light brownish gray (2.5Y 6/2) extremely gravelly loam, dark grayish brown (2.5Y 4/2) moist; common medium prominent yellowish red (5YR 5/6) mottles; massive; soft, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; many very fine interstitial pores; about 50 percent pebbles, 10 percent cobbles, and 10 percent stones; slightly effervescent; neutral (pH 6.6); gradual smooth boundary.

IIIC3g—39 to 60 inches; light gray (5Y 7/1) extremely gravelly loam, gray (5Y 5/1) moist; massive; soft, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; many very fine interstitial pores; about 50 percent pebbles, 10 percent cobbles, and 10 percent stones; slightly effervescent; neutral (pH 6.9).

The mollic epipedon is 20 to 35 inches thick.

A horizon: Rock fragment content is 15 to 25 percent. Reaction is neutral or mildly alkaline.

IIB horizon: Texture is gravelly silt loam or gravelly loam. Rock fragment content is 15 to 25 percent. Reaction is neutral or mildly alkaline.

IIIC horizon: Texture is very gravelly loam or extremely gravelly loam. Rock fragment content is 45 to 75 percent. Reaction is slightly acid or neutral.

Greys Series

The Greys series consists of very deep, well drained soils on foothills, fan terraces, and mountain foot slopes. These soils formed in loess and in silty alluvium derived from loess. Slope is 4 to 30 percent. Elevation is 5,500 to 7,000 feet. Average annual precipitation is 18 to 22 inches, and average annual air temperature is 36 to 43 degrees F.

Typical pedon of a Greys silt loam in an area of Lanoak-Greys association, 4 to 12 percent slopes, about 7 miles north of Inkom, about 2,397 feet east and 2,219 feet north of the southwest corner of sec. 14, T. 6 S., R. 36 E.

O1 and O2—3 inches to 0; undecomposed and partially decomposed grasses, leaves, and twigs.

A11—0 to 3 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots, common medium roots, and few coarse roots; many very fine tubular pores and few very fine interstitial pores; slightly acid (pH 6.3); clear smooth boundary.

A12—3 to 8 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; weak coarse and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots, common medium roots, and few coarse roots; many very fine and fine tubular pores; medium acid (pH 5.9); clear smooth boundary.

A2—8 to 12 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; weak medium and fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots, common medium roots, and few coarse roots; many very fine and few fine tubular pores; medium acid (pH 5.8); clear smooth boundary.

A&B—12 to 19 inches; 60 percent light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; 40 percent brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak coarse and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common medium, fine, and very fine roots; many very fine tubular pores; medium acid (pH 5.6); gradual smooth boundary.

B21t—19 to 34 inches; brown (10YR 5/3) silt loam, dark yellowish brown (10YR 4/4) moist; moderate coarse and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common medium, fine, and very fine roots; common fine and very fine tubular pores; few thin clay films in pores and on faces of peds; medium acid (pH 5.6); clear smooth boundary.

B22t—34 to 41 inches; light yellowish brown (10YR 6/4) silt loam, brown (10YR 4/3) moist; moderate coarse and medium prismatic structure; hard, friable, slightly sticky and slightly plastic; few medium, fine, and very fine roots; common fine and very fine tubular pores; common thin clay films in pores and on faces of peds; medium acid (pH 5.6); clear smooth boundary.

B23t—41 to 60 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; moderate medium and fine angular blocky structure; hard, friable, slightly sticky and slightly plastic; few medium, fine, and very fine roots; few fine and very fine tubular pores; common thin clay films in pores and on faces of peds; medium acid (pH 5.6).

The solum is 30 to 60 inches thick or more. Lime is at a depth of 50 to 60 inches or more. Clay content in the control section averages 18 to 32 percent.

A horizon: Reaction is medium acid to neutral.

B horizon: Texture is silt loam or silty clay loam. Reaction is medium acid to neutral.

Hades Series

The Hades series consists of very deep, well drained soils on mountainsides, foothills, fan terraces, and stream terraces. These soils formed in mixed alluvium derived from loess and quartzite. Slope is 1 to 60 percent. Elevation is 4,800 to 7,000 feet. Average annual precipitation is 16 to 20 inches, and average annual air temperature is 39 to 45 degrees F.

Typical pedon of a Hades gravelly silt loam in an area of Lanoak-Hades complex, 6 to 20 percent slopes, about 9 miles west and 1 mile south of McCammon, about 1,585 feet east and 10 feet south of the northwest corner of sec. 16, T. 9 S., R. 35 E.

A11—0 to 3 inches; dark grayish brown (10YR 4/2) gravelly silt loam, very dark grayish brown (10YR 3/2) moist; weak medium and fine subangular blocky structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots and few coarse and medium roots; many very fine interstitial pores and few very fine tubular pores; about 15 percent pebbles; neutral (pH 6.9); clear smooth boundary.

A12—3 to 7 inches; dark brown (10YR 4/3) gravelly silt loam, very dark grayish brown (10YR 3/2) moist; weak coarse and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and very fine roots and few medium roots; common fine and very fine tubular pores; about 15 percent pebbles; medium acid (pH 6.0); clear smooth boundary.

B1t—7 to 14 inches; dark brown (10YR 4/3) gravelly silt loam, very dark grayish brown (10YR 3/2) moist; moderate medium and fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common fine and very fine roots and few medium roots; common fine and very fine tubular pores; common thin clay films in pores and on faces of peds; about 15 percent pebbles and 5 percent cobbles; medium acid (pH 5.9); gradual smooth boundary.

B21t—14 to 22 inches; brown (10YR 5/3) gravelly silty clay loam, dark brown (10YR 3/3) moist; moderate coarse and medium subangular blocky structure; hard, friable, sticky and plastic; common very fine roots and few medium and fine roots; common fine and very fine tubular pores; common moderately thick clay films in pores and on faces of peds; about 15 percent pebbles and 5 percent cobbles; medium acid (pH 6.0); clear wavy boundary.

B22t—22 to 33 inches; yellowish brown (10YR 5/4) gravelly silty clay loam, dark yellowish brown (10YR 4/4) moist; moderate coarse and medium prismatic structure; very hard, very firm, very sticky and very plastic; few fine and very fine roots; common fine and very fine tubular pores; continuous thick clay films in pores and on faces of peds; about 15 percent pebbles and 5 percent cobbles; medium acid (pH 5.7); gradual wavy boundary.

B23t—33 to 60 inches; light yellowish brown (10YR 6/4) gravelly silty clay loam, yellowish brown (10YR 5/4) moist; moderate medium and fine angular blocky structure; hard, firm, very sticky and very plastic; few fine and very fine roots; common fine and very fine tubular pores; common thick clay films in pores and on faces of peds; about 15 percent pebbles and 5 percent cobbles; medium acid (pH 5.6).

Bedrock is at a depth of 60 inches or more. Lime is at a depth of 54 to 60 inches or more. Rock fragments average 15 to 30 percent of the control section and are mainly pebbles. Clay content in the control section averages 25 to 34 percent.

A horizon: Rock fragment content is 15 to 30 percent. Reaction is medium acid to neutral.

B2t horizon: Texture is gravelly silt loam or gravelly silty clay loam. Rock fragment content is 15 to 30 percent. Reaction is medium acid to moderately alkaline.

Haploxerolls

Haploxerolls are deep and very deep, well drained soils on terraces at the edges of the Portneuf Basalt. They formed in alluvium and colluvium derived from mixed sources. They are too variable to map as individual units. Slope is 20 to 60 percent. Elevation is 4,500 to 4,700 feet. The average annual precipitation is 12 to 16 inches, and the average annual air temperature is 42 to 46 degrees F.

Typical pedon of Haploxerolls in an area of Rubble land-Haploxerolls complex, steep, about 3 miles northwest of McCammon, about 800 feet north and 1,350 feet west of the southeast corner of sec. 27, T. 8 S., R. 36 E.

A1—0 to 8 inches; grayish brown (10YR 5/2) gravelly silt loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; common very fine and fine interstitial pores; 30 percent pebbles; neutral (pH 7.0); clear smooth boundary.

B2—8 to 15 inches; brown (10YR 5/3) gravelly silt loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots, and common medium and coarse roots; common very fine tubular pores; 30 percent pebbles; mildly alkaline (pH 7.4); abrupt smooth boundary.

C1ca—15 to 35 inches; pale brown (10YR 6/3) very gravelly silt loam, brown (10YR 4/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine, fine, and medium roots; many very fine and fine tubular pores; 45 percent pebbles; strongly effervescent; mildly alkaline (pH 7.6); gradual smooth boundary.

C2ca—35 to 60 inches; pale brown (10YR 6/3) very gravelly silt loam, brown (10YR 4/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine and fine tubular pores; 50 percent pebbles; strongly effervescent; mildy alkaline (pH 7.6).

Bedrock is at a depth of 40 to 60 inches or more. Secondary lime, where present, is at a depth of 7 to 60 inches or more. Mollic colors extend to a depth of 7 to 60 inches. Organic carbon content decreases irregularly with depth in some pedons. Clay content of the control section averages 5 to 25 percent.

A horizon: Texture is gravelly silt loam, cobbly sandy loam, or extremely bouldery loam. Rock fragment content is 15 to 50 percent. Reaction is neutral or mildly alkaline.

B horizon: Texture is gravelly silt loam, very gravelly silt loam, very cobbly sandy loam, or extremely bouldery loam. Rock fragment content is 20 to 70 percent. Reaction is neutral to moderately alkaline.

C horizon: Texture is very gravelly silt loam, very cobbly sand, or extremely bouldery sandy loam. Rock fragment content is 35 to 90 percent. Reaction is mildly alkaline to strongly alkaline.

Harkness Series

The Harkness series consists of very deep, well drained soils on mountainsides. These soils formed in mixed alluvium derived from various kinds of sedimentary and metasedimentary rock, dominantly sandstone and quartzite. Slope is 20 to 50 percent. Elevation is 6,000 to 8,000 feet. Average annual precipitation is 22 to 32 inches, and average annual air temperature is 35 to 39 degrees F.

Typical pedon of a Harkness silt loam in an area of Harkness-Sedgway-Mikesell complex, 20 to 50 percent slopes, about 4 miles south of Sedgwick Peak, about 1,000 feet south and 200 feet east of the northwest corner of sec. 21, T. 11 S., R. 39 E.

O1—2 inches to 0.5 inch; undecomposed needles, leaves, twigs, and grasses.

O2—0.5 inch to 0; decomposed and partially decomposed needles, leaves, twigs, and grasses.

A11—0 to 3 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; weak coarse and medium subangular blocky structure parting to weak medium granular; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine interstitial pores; about 10 percent pebbles; medium acid (pH 5.6); abrupt smooth boundary.

A12—3 to 8 inches; brown (10YR 4/3) silt loam, very dark brown (10YR 2/2) moist; weak coarse and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine tubular pores and common very fine interstitial pores; about 10 percent pebbles and cobbles; strongly acid (pH 5.5); clear wavy boundary.

A2—8 to 14 inches; pale brown (10YR 6/3) very cobbly loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure parting to weak fine subangular blocky; hard, very friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots and few coarse roots; many very fine tubular pores and few very fine interstitial pores; about 20 percent pebbles and 15 percent cobbles; strongly acid (pH 5.5); clear wavy boundary.

B&A—14 to 21 inches; light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 4/6) moist; coatings of pale brown (10YR 6/3) A2 material on faces of peds, yellowish brown (10YR 4/4) moist; moderate medium and fine subangular blocky structure; hard, firm, sticky and plastic; common very fine, fine, and medium roots and few coarse roots; common very fine tubular pores; few thin clay films on faces of peds and in pores; about 10 percent pebbles and cobbles; strongly acid (pH 5.3); gradual wavy boundary.

B21t—21 to 34 inches; light yellowish brown (10YR 6/4) silty clay loam, dark yellowish brown (10YR 4/6) moist; strong coarse and medium angular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots and few medium roots, mostly along faces of peds and in cracks; common very fine tubular pores; many strong brown (7.5YR 4/6) thick clay films on faces of peds and in pores; about 10 percent pebbles and cobbles; strongly acid (pH 5.2); diffuse wavy boundary.

B22t—34 to 60 inches; light yellowish brown (10YR 6/4) silty clay loam, dark yellowish brown (10YR 4/4) moist; strong coarse and medium angular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots, mostly along faces of peds and in cracks; few very fine tubular pores; common strong brown (7.5YR 5/6) moderately thick clay films on faces of peds and in pores; about 10 percent pebbles and cobbles; strongly acid (pH 5.2).

Depth to bedrock and thickness of the solum are 60 inches or more.

A1 horizon: Rock fragment content is 0 to 10 percent. Clay content is 15 to 20 percent. Reaction is strongly acid or medium acid.

A2 horizon: Texture is very cobbly loam or stony silt loam. Rock fragment content is 15 to 40 percent. Clay content is 15 to 25 percent. Reaction is strongly acid or medium acid.

B2t horizon: Texture is clay loam, silty clay loam, or cobbly silty clay. Rock fragment content is 5 to 30 percent. Clay content is 35 to 55 percent. Reaction is very strongly acid to slightly acid.

Holmes Series

The Holmes series consists of very deep, well drained soils on stream terraces. These soils formed in mixed alluvium derived from various kinds of sedimentary and metasedimentary rock. Extremely gravelly loamy coarse sand is at a depth of 20 to 40 inches. Slope is 1 to 10 percent. Elevation is 5,000 to 6,200 feet. Average annual precipitation is 16 to 20 inches, and average annual air temperature is 40 to 45 degrees F.

Typical pedon of a Holmes very cobbly loam in an area of Hades-Holmes complex, 1 to 10 percent slopes, about 2 miles east of Cottonwood Peak, about 100 feet north and 2,290 feet west of the southeast corner of sec. 5, T. 12 S., R. 39 E.

A11—0 to 3 inches; dark grayish brown (10YR 4/2) very cobbly loam, very dark gray (10YR 3/1) moist; weak medium subangular blocky structure parting to weak fine granular; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine interstitial pores; about 35 percent cobbles and 15 percent pebbles; neutral (pH 7.2); abrupt smooth boundary.

A12—3 to 8 inches; dark brown (10YR 4/3) very cobbly loam, very dark grayish brown (10YR 3/2) moist; weak coarse and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots, common fine roots, and few medium roots; common very fine tubular and interstitial pores; about 35 percent cobbles and 20 percent pebbles; neutral (pH 7.2); clear smooth boundary.

B1—8 to 16 inches; dark yellowish brown (10YR 4/4) very cobbly loam, dark brown (7.5YR 3/2) moist; weak coarse and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; common very fine tubular pores; about 35 percent cobbles and 20 percent pebbles; neutral (pH 7.3); clear wavy boundary.

B2t—16 to 28 inches; yellowish brown (10YR 5/4) very cobbly clay loam, brown (7.5YR 4/4) moist; moderate medium and fine subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots and few medium roots; common very fine tubular pores; few thin clay films on the faces of peds and in pores; about 35 percent cobbles and 25 percent pebbles; neutral (pH 7.1); clear wavy boundary.

IIC—28 to 60 inches; multicolored extremely gravelly loamy coarse sand; single grain; loose; common very fine and fine roots and few medium roots; about 25 percent cobbles and 45 percent pebbles.

Depth to the IIC Horizon is 20 to 40 inches. The control section averages 50 to 60 percent rock fragments. Clay content in the control section averages 22 to 30 percent.

A horizon: Texture is gravelly loam or very cobbly loam. Rock fragment content is 20 to 55 percent. Reaction is slightly acid or neutral.

B2t horizon: Texture is very gravelly loam or very cobbly clay loam. Clay content is 22 to 30 percent. Rock fragment content is 50 to 60 percent. Reaction is slightly acid or neutral.

IIC horizon: Rock fragment content is 65 to 75 percent.

Hondoho Series

The Hondoho series consists of very deep, well drained soils on foothills, mountainsides, and fan terraces. These soils formed in mixed alluvium. Slope is 4 to 60 percent. Elevation is 4,500 to 6,700 feet. Average annual precipitation is 12 to 18 inches, and average annual air temperature is 40 to 45 degrees F.

Typical pedon of a Hondoho cobbly silt loam in an area of Hondoho-Arbone-Ririe complex, 20 to 50 percent slopes, about 3 miles southeast of Downey, about 2,285 feet west and 2,527 feet south of the northeast corner of sec. 12, T. 12 S., R. 37 E.

A1—0 to 8 inches; grayish brown (10YR 5/2) cobbly silt loam, very dark grayish brown (10YR 3/2) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and very fine roots; many very fine interstitial pores; about 20 percent pebbles and 15 percent cobbles; mildly alkaline (pH 7.4); clear smooth boundary.

B2—8 to 15 inches; brown (10YR 5/3) cobbly silt loam, dark brown (10YR 3/3) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and very fine roots; many very fine tubular pores; about 20 percent pebbles and 15 percent cobbles; slightly effervescent; mildly alkaline (pH 7.8); clear smooth boundary.

C1ca—15 to 31 inches; light yellowish brown (10YR 6/4) very cobbly sandy clay loam, very pale brown (10YR 7/4) crushed and yellowish brown (10YR 5/6) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; many very fine tubular pores; about 35 percent pebbles and 25 percent cobbles; moderately thick lime coatings on all sides of coarse fragments; strongly effervescent; moderately alkaline (pH 7.9); gradual smooth boundary.

C2ca—31 to 60 inches; pale brown (10YR 6/3) very cobbly sandy clay loam, very pale brown (10YR 7/3) crushed and yellowish brown (10YR 5/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; many very fine tubular pores; about 35 percent pebbles and 25 percent cobbles; thin lime coatings on undersides of coarse fragments; strongly effervescent; moderately alkaline (pH 7.9).

Secondary lime is at a depth of 8 to 15 inches. Bedrock is at a depth of 60 inches or more. Rock fragment content in the control section averages 35 to 45 percent.

A horizon: Texture is cobbly silt loam or gravelly silt loam. Rock fragment content is 25 to 35 percent. Reaction is neutral or mildly alkaline.

B2 horizon: Texture is gravelly silt loam, very gravelly silt loam, cobbly silt loam, or very cobbly loam. Rock fragment content is 20 to 45 percent. Reaction is neutral to moderately alkaline.

IIC horizon: Texture is very gravelly loam, very gravelly silt loam, very cobbly loam, or very cobbly sandy clay loam. Rock fragment content is 50 to 60 percent. Reaction is mildly alkaline or moderately alkaline.

Inkom Series

The Inkom series consists of very deep, poorly drained soils on stream terraces and flood plains. The drainage of these soils has been altered to moderately well drained in some areas. These soils formed in silty alluvium derived from mixed sources. Slope is 0 to 1 percent. Elevation is 4,500 to 5,400 feet. Average annual precipitation is 12 to 16 inches, and average annual air temperature is 42 to 45 degrees F.

Typical pedon of Inkom silt loam, 0 to 1 percent slopes, about 1 mile south and 1 mile east of the town of Inkom, about 2,150 feet south and 1,350 feet east of the northwest corner of sec. 27, T. 7 S., R. 36 E.

A11g—0 to 3 inches; grayish brown (2.5Y 5/2) silt loam, very dark grayish brown (2.5Y 3/2) moist; weak fine platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine roots; many very fine interstitial pores; strongly effervescent; mildly alkaline (pH 7.8); abrupt smooth boundary.

A12g—3 to 7 inches; grayish brown (2.5Y 5/2) silt loam, very dark grayish brown (2.5Y 3/2) moist; common fine prominent dark yellowish brown (10YR 3/4) mottles; moderate coarse and medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine roots; many very fine interstitial pores and few fine tubular pores; strongly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

B21g—7 to 13 inches; gray (5Y 5/1) silt loam, very dark gray (5Y 3/1) moist; weak coarse and medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; many very fine roots; common fine tubular pores; strongly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

B22g—13 to 27 inches; grayish brown (2.5Y 5/2) silt loam, very dark grayish brown (2.5Y 3/2) moist; weak coarse subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; many very fine and few medium tubular pores; strongly effervescent; moderately alkaline (pH 8.3); clear wavy boundary.

B23g—27 to 43 inches; gray (5Y 5/1) silt loam, dark gray (5Y 4/1) moist; weak coarse subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine roots; many very fine tubular pores; strongly effervescent; moderately alkaline (pH 7.9); gradual smooth boundary.

B24g—43 to 60 inches; light gray (5Y 6/1) silt loam, dark gray (5Y 4/1) moist; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; many very fine tubular pores; strongly effervescent; mildly alkaline (pH 7.8).

The mollic epipedon is 24 to 31 inches thick. A buried A or B horizon, or both, is in some pedons. Clay content in the control section averages 18 to 27 percent.

A horizon: Clay content is 12 to 20 percent. Reaction is mildly alkaline or moderately alkaline.

B horizon: Clay content is 18 to 27 percent. Reaction is mildly alkaline or moderately alkaline.

Ireland Series

The Ireland series consists of moderately deep, well drained soils on mountainsides and ridges. These soils formed in alluvium, colluvium, and residuum derived dominantly from interbedded dolomite, limestone, and sandstone. Slope is 20 to 60 percent. Elevation is 5,200 to 8,000 feet. Average annual precipitation is 16 to 20 inches, and average annual air temperature is 41 to 45 degrees F.

Typical pedon of an Ireland extremely stony silt loam in an area of Ireland-Camelback-Rock outcrop complex, 30 to 60 percent slopes, about 6 miles east of Virginia, about 975 feet north and 1,390 feet west of the southeast corner of sec. 5, T. 11 S., R. 38 E.

A1—0 to 7 inches; brown (10YR 5/3) extremely stony silt loam, dark brown (10YR 3/3) moist; weak medium and fine subangular blocky structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots and common coarse and medium roots; many very fine interstitial pores and few very fine tubular pores; about 10 percent pebbles, 25 percent cobbles, and 20 percent stones; neutral (pH 7.1); clear wavy boundary.

B21—7 to 12 inches; brown (10YR 5/3) very stony silt loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure parting to weak fine subangular blocky; soft, very friable, slightly sticky and slightly plastic; common coarse, medium, fine, and very fine roots; many very fine interstitial pores and few very fine tubular pores; about 10 percent pebbles, 20 percent cobbles, and 20 percent stones; mildly alkaline (pH 7.4); gradual irregular boundary.

B22ca—12 to 30 inches; brown (10YR 5/3) extremely stony silt loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common coarse, medium, fine, and very fine roots; many very fine interstitial pores; about 5 percent pebbles, 15 percent cobbles, and 60 percent stones; rock fragments have moderately thick lime coatings; strongly effervescent; mildly alkaline (pH 7.4); abrupt irregular boundary.

R—30 inches; interbedded dolomite and limestone.

Bedrock is at a depth of 20 to 40 inches. Lime is at a depth of 12 to 24 inches. A Cca horizon is present in some pedons.

A horizon: Rock fragment content is 45 to 60 percent. Reaction is neutral or mildly alkaline.

B horizon: Texture is very stony silt loam or extremely stony silt loam. Rock fragment content is 50 to 85 percent. Reaction is mildly alkaline or moderately alkaline.

Joes Series

The Joes series consists of very deep, well drained soils on fan terraces. These soils formed in loess and in silty alluvium derived from loess. Slope is 1 to 12 percent. Elevation is 4,500 to 6,000 feet. Average annual precipitation is 12 to 16 inches, and average annual air temperature is 41 to 45 degrees F.

Typical pedon of Joes silt loam, 4 to 12 percent slopes, about 3.5 miles southwest of McCammon, about 2,315 feet north and 85 feet east of the southwest corner of sec. 21, T. 9 S., R. 36 E.

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure parting to weak coarse granular; slightly hard, friable, slightly sticky and slightly plastic; many fine and very fine roots; many very fine interstitial pores; slightly effervescent; mildly alkaline (pH 7.6); abrupt smooth boundary.

B2—6 to 13 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular pores; slightly effervescent; mildly alkaline (pH 7.6); abrupt smooth boundary.

C1ca—13 to 21 inches; very pale brown (10YR 7/3) silt loam, yellowish brown (10YR 5/4) moist; massive; hard, friable, slightly sticky and slightly plastic; common very fine roots; common fine and very fine tubular pores; strongly effervescent; mildly alkaline (pH 7.6); gradual smooth boundary.

C2ca—21 to 36 inches; light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 4/4) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine roots; many fine and very fine tubular pores; strongly effervescent; mildly alkaline (pH 7.6); gradual smooth boundary.

C3—36 to 43 inches; pale brown (10YR 6/3) silt loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; many fine and very fine tubular pores; slightly effervescent; mildly alkaline (pH 7.7); abrupt smooth boundary.

C4—43 to 60 inches; light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, firm, slightly sticky and slightly plastic; few very fine roots; many fine and very fine tubular pores; slightly effervescent; mildly alkaline (pH 7.7).

Bedrock is at a depth of 60 inches or more. Secondary lime is at a depth of 11 to 18 inches. Clay content in the control section averages 18 to 22 percent.

A and B horizons: Reaction is neutral or mildly alkaline.

C horizon: Reaction is mildly alkaline or moderately alkaline.

Joevar Series

The Joevar series consists of very deep, well drained soils on terraces. These soils formed in silty alluvium derived dominantly from loess. Slope is 0 to 3 percent. Elevation is 4,500 to 5,400 feet. Average annual precipitation is 12 to 16 inches, and average annual air temperature is 42 to 45 degrees F.

Typical pedon of Joevar silt loam, 0 to 3 percent slopes, about 1 mile north of Virginia, about 2,000 feet east and 2,320 feet north of the southwest corner of sec. 32, T. 10 S., R. 37 E.

Ap1—0 to 4 inches; brown (10YR 4/3) silt loam, dark brown (10YR 3/3) moist; weak coarse subangular blocky structure; hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine tubular pores; slightly effervescent; mildly alkaline (pH 7.8); abrupt smooth boundary.

Ap2—4 to 10 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak coarse subangular blocky structure; hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine tubular pores; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

B21—10 to 25 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak coarse subangular blocky structure; hard, friable, slightly sticky and slightly plastic; many very fine roots and common fine and medium roots; many very fine tubular pores; slightly effervescent; moderately alkaline (pH 7.9); clear wavy boundary.

B22—25 to 33 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; moderate coarse prismatic structure; very hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; many very fine tubular pores; slightly effervescent; mildly alkaline (pH 7.8); clear smooth boundary.

B23bca—33 to 37 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 3/3) moist; weak coarse prismatic structure parting to moderate medium angular blocky; extremely hard, firm, slightly sticky and slightly plastic; common very fine roots and few fine roots; many very fine tubular pores; lime coatings on faces of peds and in pores; strongly effervescent; moderately alkaline (pH 7.9); abrupt smooth boundary.

B24bca—37 to 60 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak coarse subangular blocky structure parting to moderate medium subangular blocky; extremely hard, firm, slightly sticky and slightly plastic; about 5 percent cicada krotovinas; few very fine and fine roots; many very fine tubular pores; lime coatings on faces of peds and in pores; violently effervescent; moderately alkaline (pH 8.1).

Secondary lime is at a depth of 33 to 40 inches. The mollic epipedon is 26 to 45 inches thick. Clay content in the control section averages 15 to 18 percent.

A horizon: Reaction is neutral to moderately alkaline.

B horizon: Reaction is mildly alkaline or moderately alkaline.

Lanoak Series

The Lanoak series consists of very deep, well drained soils on foothills, ridges, fan terraces, and mountainsides. These soils formed in loess and in silty alluvium derived from loess. Slope is 1 to 50 percent. Elevation is 4,700 to 6,600 feet. Average annual precipitation is 16 to 18 inches, and average annual air temperature is 41 to 45 degrees F.

Typical pedon of Lanoak silt loam, 12 to 20 percent slopes (fig. 12), about 2 miles south of Inkom, about 1,050 feet south and 1,260 feet east of the northwest corner of sec. 33, T. 7 S., R. 36 E.

Ap—0 to 11 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, friable, slightly sticky and slightly plastic; many very fine and few medium roots; few very fine interstitial pores; neutral (pH 6.6); abrupt smooth boundary.

A12—11 to 22 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, friable, slightly sticky and slightly plastic; many very fine and few fine roots; common very fine interstitial pores; neutral (pH 6.8); gradual smooth boundary.

B1—22 to 26 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and few fine roots; many very fine and few fine tubular pores; neutral (pH 7.0); clear smooth boundary.

B2—26 to 35 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; weak coarse prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; common very fine and few fine tubular pores; neutral (pH 7.2); clear smooth boundary.

B3—35 to 44 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; weak medium and coarse prismatic structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; mildly alkaline (pH 7.4); abrupt irregular boundary.

C1ca—44 to 60 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common fine tubular pores; strongly effervescent; mildly alkaline (pH 7.4).

The mollic epipedon is 20 to 35 inches thick. Lime is at a depth of 43 to 60 inches. Clay content in the control section averages 19 to 22 percent.

A horizon: Reaction is slightly acid to mildly alkaline.

B and C horizons: Reaction is neutral or mildly alkaline.

Lonigan Series

The Lonigan series consists of well drained soils on mountainsides and foothills. These soils are moderately deep to paralithic contact. They formed in alluvium and

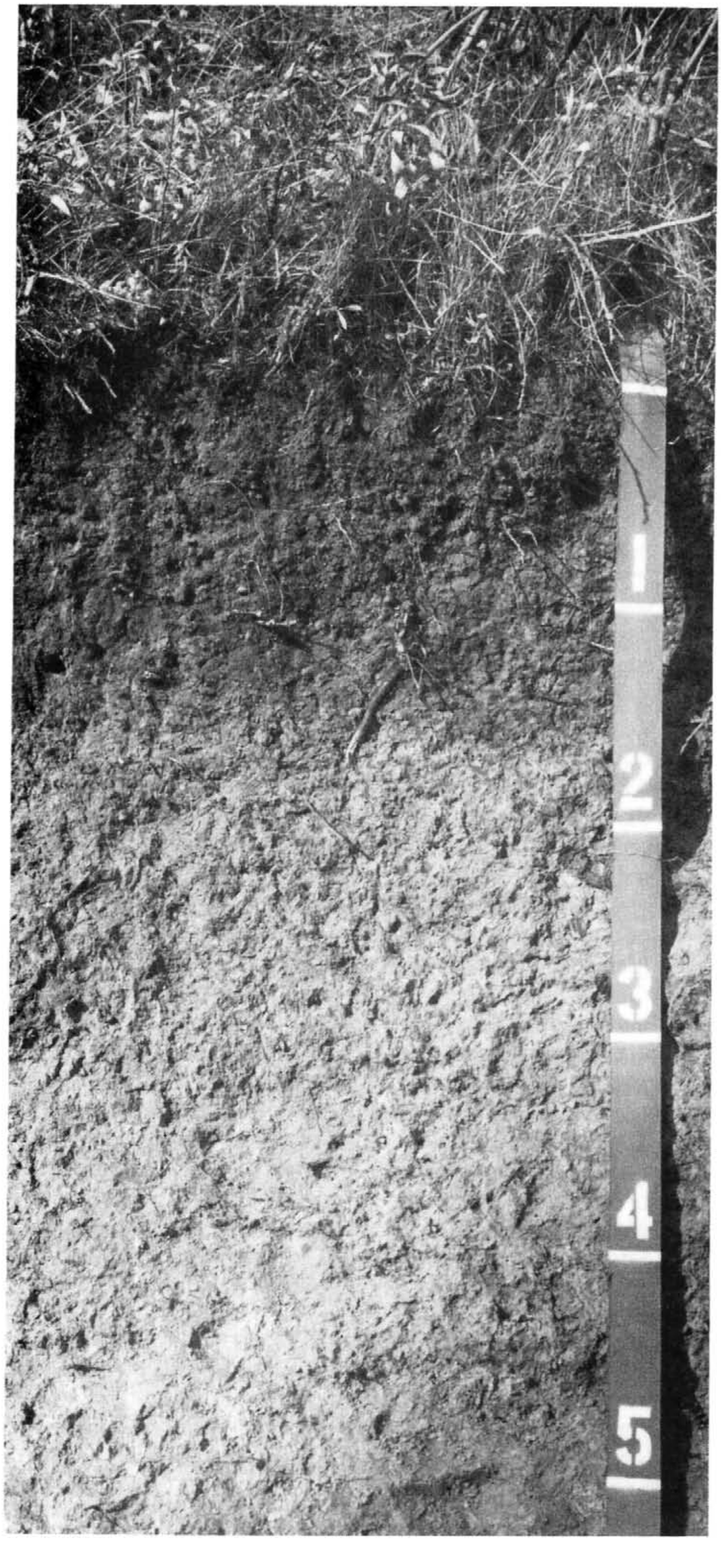

Figure 12.—Profile of Lanoak silt loam, I2 to 20 percent slopes.

residuum derived from consolidated volcanic ash. Slope is 12 to 50 percent. Elevation is 4,800 to 6,500 feet. Average annual precipitation is 16 to 18 inches, and average annual air temperature is 42 to 45 degrees F.

Typical pedon of a Lonigan cobbly silt loam in an area of Coalbank-Trailcreek-Lonigan complex, 20 to 50 percent slopes, about 1.5 miles southwest of Hawkins Reservoir, about 220 feet south and 1,100 feet east of the northwest corner of sec. 3, T. 11 S., R. 35 E.

A11—0 to 3 inches; dark grayish brown (10YR 4/2) cobbly silt loam, very dark grayish brown (10YR 3/2) moist; weak very fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine interstitial pores; about 15 percent pebbles and 15 percent cobbles; mildly alkaline (pH 7.5); abrupt smooth boundary.

A12—3 to 7 inches; grayish brown (10YR 5/2) cobbly silt loam, very dark grayish brown (10YR 3/2) moist; weak very fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine interstitial pores; about 15 percent pebbles and 15 percent cobbles; mildly alkaline (pH 7.6); clear smooth boundary.

B2—7 to 12 inches; brown (10YR 5/3) very cobbly silt loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine interstitial pores; about 20 percent pebbles and 25 percent cobbles; slightly effervescent; mildly alkaline (pH 7.6); clear wavy boundary.

C1ca—12 to 19 inches; pale brown (10YR 6/3) very cobbly loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; many very fine roots, common fine and medium roots, and few coarse roots; many very fine interstitial pores; about 25 percent pebbles and 30 percent cobbles; violently effervescent; mildly alkaline (pH 7.5); clear wavy boundary.

C2ca—19 to 27 inches; white (10YR 8/2) extremely cobbly loam, light yellowish brown (10YR 6/4) moist; massive; soft, very friable, nonsticky and slightly plastic; common very fine, fine, and medium roots and few coarse roots; many very fine interstitial pores; about 30 percent pebbles and 35 percent cobbles; violently effervescent; moderately alkaline (pH 8.1); abrupt irregular boundary.

Cr—27 inches; fractured consolidated volcanic ash.

Paralithic contact is at a depth of 20 to 40 inches. Vitric volcanic ash content in the control section averages 65 to 75 percent. Rock fragment content in the control section is 35 to 70 percent.

A horizon: Rock fragment content is 15 to 35 percent. Reaction is neutral or mildly alkaline.

B horizon: Rock fragment content is 35 to 50 percent. Reaction is mildly alkaline or moderately alkaline.

C horizon: Texture is very cobbly loam or extremely cobbly loam. Rock fragment content is 50 to 70 percent. Reaction is mildly alkaline or moderately alkaline.

Manila Series

The Manila series consists of very deep, well drained soils on foothills, fan terraces, and mountain foot slopes. These soils formed in alluvium derived from sedimentary and metasedimentary rock and loess. Slope is 6 to 50 percent. Elevation is 5,000 to 6,300 feet. Average annual precipitation is 15 to 20 inches, and average annual air temperature is 40 to 45 degrees F.

Typical pedon of a Manila silt loam in an area of Manila-Bancroft complex, 6 to 15 percent slopes, about 2 miles southwest of Cottonwood Peak, about 2,165 feet north and 1,160 feet east of the southwest corner of sec. 14, T. 12 S., R. 38 E.

A1—0 to 7 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak thick platy structure parting to weak fine subangular blocky; hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine and common fine tubular pores; about 5 percent pebbles; slightly acid (pH 6.1); clear smooth boundary.

A3—7 to 15 inches; grayish brown (10YR 5/2) silty clay loam, very dark grayish brown (10YR 3/2) moist; moderate coarse angular blocky structure parting to moderate fine angular blocky; hard, firm, sticky and plastic; common very fine, fine, and medium roots and few coarse roots; many very fine tubular pores; about 5 percent pebbles; slightly acid (pH 6.1); clear smooth boundary.

B21t—15 to 25 inches; yellowish brown (10YR 5/4) silty clay, dark brown (10YR 3/3) moist; moderate coarse angular blocky structure parting to moderate fine angular blocky; very hard, very firm, very sticky and very plastic; common very fine, fine, and medium roots; many very fine tubular pores; many moderately thick clay films in pores and on faces of peds; about 5 percent pebbles; slightly acid (pH 6.2); gradual wavy boundary.

B22t—25 to 36 inches; yellowish brown (10YR 5/4) silty clay loam, dark brown (7.5YR 4/4) moist; moderate coarse prismatic structure parting to moderate medium and fine angular blocky; very hard, very firm, sticky and plastic; common very fine roots and few fine and medium roots; many very fine tubular pores; many moderately thick clay films in pores and on faces of peds; about 5 percent pebbles; slightly acid (pH 6.1); gradual wavy boundary.

B23t—36 to 44 inches; dark brown (10YR 4/3) silty clay loam, dark yellowish brown (10YR 4/4) moist; moderate coarse prismatic structure parting to moderate medium subangular blocky; hard, friable, sticky and plastic; common very fine roots and few fine and medium roots; many very fine and few fine tubular pores; common thin clay films in pores and on faces of peds; about 5 percent pebbles; neutral (pH 6.7); clear wavy boundary.

B3—44 to 48 inches; yellowish brown (10YR 5/4) silty clay loam, brown (7.5YR 4/4) moist; moderate coarse angular blocky structure parting to moderate medium angular blocky; slightly hard, friable, sticky and plastic; few very fine and fine roots; many very fine tubular pores; about 5 percent pebbles; slightly acid (pH 6.4); abrupt wavy boundary.

C1ca—48 to 55 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; moderate coarse angular blocky structure parting to moderate medium angular blocky; hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; many very fine tubular pores; strongly effervescent; common fine lime seams; about 5 percent pebbles; neutral (pH 7.3); gradual wavy boundary.

C2ca—55 to 60 inches; light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 4/4) moist; common fine and medium angular blocky structure; hard, firm, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; strongly effervescent; common fine lime seams; about 5 percent pebbles; neutral (pH 7.2).

Bedrock is at a depth of 60 inches or more. Lime is at a depth of 45 to 60 inches or more. Clay content in the control section is 35 to 50 percent.

A horizon: The upper part of the horizon is silt loam, and the lower part is silt loam or silty clay loam. Clay content is 15 to 32 percent. Rock fragment content ranges from 0 to 5 percent. Reaction is slightly acid or neutral.

B2t horizon: Texture is silty clay loam, silty clay or clay. Clay content is 35 to 50 percent. Rock fragment content ranges from 0 to 5 percent. Reaction is slightly acid or neutral.

C horizon: Texture is silt loam or loam. Clay content is 12 to 18 percent. Rock fragment content ranges from 0 to 5 percent. Reaction is neutral or mildly alkaline.

McCarey Series

The McCarey series consists of moderately deep, well drained soils on basalt flows. These soils formed in loess, silty alluvium, and material weathered from basalt. Slope is 1 to 12 percent. Elevation is 4,500 to 4,800 feet. Average annual precipitation is 12 to 16 inches, and average annual air temperature is 43 to 45 degrees F.

Typical pedon of a McCarey silt loam in an area of Lava flows-McCarey-McCarey Variant complex, 1 to 8 percent slopes, about 2 miles northwest of McCammon, about 920 feet south and 1,490 feet east of the northwest corner of sec. 35, T. 8 S., R. 36 E.

A11—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure parting to weak medium and fine granular; slightly hard, very friable, slightly sticky and slightly plastic; many coarse, medium, fine, and very fine roots; common very fine interstitial pores and few very fine tubular pores; about 5 percent basalt pebbles; slightly acid (pH 6.2); gradual smooth boundary.

A12—7 to 12 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common medium, fine, and very fine roots and few coarse roots; common very fine interstitial pores and few very fine tubular pores; about 5 percent basalt pebbles; slightly acid (pH 6.3); clear smooth boundary.

B2t—12 to 17 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common medium, fine, and very fine roots; few very fine tubular pores; few thin clay films on faces of peds and in pores; about 5 percent basalt pebbles; neutral (pH 6.6); abrupt smooth boundary.

Cca—17 to 28 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; massive; hard, firm, slightly sticky and slightly plastic; common fine and very fine roots and few medium roots; few very fine tubular pores; about 5 percent basalt pebbles; violently effervescent; neutral (pH 7.0); abrupt smooth boundary.

R—28 inches; lime-coated, fractured basalt.

Bedrock is at a depth of 20 to 40 inches. Secondary lime is at a depth of 15 to 25 inches. Clay content in the control section is 20 to 30 percent.

A horizon: Rock fragment content is 0 to 5 percent. Reaction is slightly acid or neutral.

B2t horizon: Texture is silt loam or silty clay loam. Clay content is 20 to 30 percent. Rock fragment content is 0 to 5 percent.

Cca horizon: Texture is silt loam or loam. Rock fragment content is 0 to 5 percent. Reaction is neutral to moderately alkaline.

McCarey Variant

The McCarey Variant consists of shallow, well drained soils on basalt flows. These soils formed in loess, silty alluvium, and material weathered from basalt. Slope is 1 to 8 percent. Elevation is 4,500 to 4,800 feet. Average annual precipitation is 12 to 16 inches, and average annual air temperature is 43 to 45 degrees F.

Typical pedon of a McCarey Variant extremely stony silt loam in an area of Lava flows-McCarey-McCarey Variant complex, 1 to 8 percent slopes, about 3 miles northwest of McCammon, about 1,635 feet north and 1,265 feet east of the southwest corner of sec. 26, T. 8 S., R. 36 E.

A1—0 to 8 inches; brown (10YR 4/3) extremely stony silt loam, very dark brown (10YR 2/2) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and very fine roots; many very fine tubular pores; about 50 percent stones and 5 percent pebbles; slightly acid (pH 6.2); clear smooth boundary.

B2t—8 to 13 inches; brown (10YR 5/3) very stony silt loam, dark brown (10YR 3/3) moist; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and very fine roots; common very fine tubular pores; few thin clay films on faces of peds and in pores; about 50 percent stones and 5 percent pebbles; slightly acid (pH 6.2); abrupt irregular boundary.

R—13 inches; fractured basalt.

Bedrock is at a depth of 10 to 20 inches. A thin Cca horizon is present in some pedons.

A horizon: Rock fragment content is 40 to 60 percent. Reaction is slightly acid or neutral.

B2t horizon: Texture is very stony silt loam or very stony loam. Rock fragment content is 40 to 60 percent. Clay content is 20 to 27 percent. Reaction is slightly acid or neutral.

McDole Series

The McDole series consists of very deep, well drained soils on low stream terraces. These soils formed in alluvium derived dominantly from loess. Slope is 0 to 2 percent. Elevation is 4,350 to 4,500 feet. Average annual precipitation is 10 to 13 inches, and average annual air temperature is 46 to 48 degrees F.

Typical pedon of a McDole silt loam in an area of McDole-McDole Variant complex, 0 to 2 percent slopes, about 0.25 mile south of Pocatello, about 1,320 feet south and 115 feet east of the northwest corner of sec. 17, T. 7 S., R. 35 E.

A11—0 to 4 inches; brown (10YR 5/3) silt loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium platy structure; slightly hard, friable, slightly sticky and nonplastic; many very fine and fine roots and few medium and coarse roots; many very fine tubular pores; slightly effervescent; mildly alkaline (pH 7.4); abrupt smooth boundary.

A12—4 to 21 inches; brown (10YR 5/3) silt loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; many very fine and fine roots; many very fine tubular pores; slightly effervescent; mildly alkaline (pH 7.5); abrupt wavy boundary.

C1—21 to 48 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; massive; hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; few very fine tubular pores; strongly effervescent; mildly alkaline (pH 7.5); gradual wavy boundary.

C2—48 to 74 inches; pale brown (10YR 6/3) silt loam, dark yellowish brown (10YR 4/4) moist; massive; hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; many very fine tubular pores; strongly effervescent; mildly alkaline (pH 7.5).

The mollic epipedon is 20 to 35 inches thick. Clay content in the control section averages 10 to 17 percent.

A and C horizons: Reaction is mildly alkaline or moderately alkaline.

These soils are taxadjunct to the McDole series because they have a thicker mollic epipedon. This difference, however, does not significantly affect use and management.

McDole Variant

The McDole Variant consists of very deep, well drained soils on flood plains. These soils formed in alluvium derived dominantly from loess. Slope is 0 to 2 percent. Elevation is 4,350 to 4,500 feet. Average annual precipitation is 10 to 13 inches, and average annual air temperature is 46 to 48 degrees F.

Typical pedon of a McDole Variant silt loam in an area of McDole-McDole Variant complex, 0 to 2 percent slopes, about 0.25 mile south of Pocatello, about 935 feet north and 855 feet west of the southeast corner of sec. 35, T. 6 S., R. 34 E.

A11—0 to 2 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak coarse platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; few very fine tubular pores; strongly effervescent; mildly alkaline (pH 7.6); abrupt smooth boundary.

A12—2 to 14 inches; dark grayish brown (10YR 4/2) silt loam, very dark gray (10YR 3/1) moist; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine tubular pores; strongly effervescent; mildly alkaline (pH 7.5); clear smooth boundary.

A13—14 to 22 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; few very fine and fine tubular pores; strongly effervescent; mildly alkaline (pH 7.6); clear smooth boundary.

A14—22 to 34 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; common very fine and fine tubular pores; strongly effervescent; mildly alkaline (pH 7.6); clear wavy boundary.

C1—34 to 60 inches; pale brown (10YR 6/3) fine sandy loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine, fine, medium, and coarse roots; many very fine interstitial pores; many small shells and shell fragments; strongly effervescent; mildly alkaline (pH 7.8).

The mollic epipedon is 20 to 35 inches thick. Clay content in the control section averages 10 to 18 percent.

A horizon: Reaction is mildly alkaline or moderately alkaline.

C horizon: Texture is fine sandy loam or loam. Reaction is mildly alkaline or moderately alkaline.

Mikesell Series

The Mikesell series consists of very deep, well drained soils on mountainsides. These soils formed in alluvium and colluvium derived dominantly from quartzite and sandstone. Slope is 20 to 50 percent. Elevation is 6,000 to 8,000 feet. Average annual precipitation is 22 to 32 inches, and average annual air temperature is 34 to 39 degrees F.

Typical pedon of a Mikesell silt loam in an area of Harkness-Sedgway-Mikesell complex, 20 to 50 percent slopes, about 3.5 miles southeast of Sedgwick Peak, about 1,450 feet north and 1,600 feet east of the southwest corner of sec. 16, T. 11 S., R. 39 E.

O1—1.5 inches to 0.5 inch; undecomposed needles, twigs, and branches.

O2—0.5 inch to 0; decomposed and partly decomposed needles, leaves, and twigs.

A21—0 to 3 inches; pinkish gray (7.5YR 6/2) silt loam, brown (10YR 4/3) moist; weak medium and fine subangular blocky structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine roots, common fine roots, and few medium and coarse roots; few fine vesicular pores, common very fine tubular pores, and many very fine interstitial pores; about 10 percent pebbles and cobbles; strongly acid (pH 5.1); abrupt smooth boundary.

A22—3 to 6 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, common fine, and few medium and coarse roots; many very fine and fine tubular pores; about 10 percent pebbles and cobbles; strongly acid (pH 5.2); abrupt wavy boundary.

A23—6 to 11 inches; very pale brown (10YR 7/3) silt loam, dark yellowish brown (10YR 4/4) moist; moderate coarse and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; many very fine and fine tubular pores; about 10 percent pebbles and cobbles; strongly acid (pH 5.2); clear wavy boundary.

B&A—11 to 17 inches; 75 percent light yellowish brown (10YR 6/4) gravelly silty clay, dark brown (10YR 4/3) moist, and 25 percent very pale brown (10YR 7/3) silt loam A2 material, dark yellowish brown (10YR 4/4) moist; moderate medium angular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots and few medium and coarse roots; many very fine and fine tubular pores; many moderately thick clay films on the faces of peds and in pores; about 15 percent pebbles and 5 percent cobbles; strongly acid (pH 5.3); clear wavy boundary.

B21t—17 to 25 inches; pale brown (10YR 6/3) gravelly silty clay, brown (10YR 4/3) moist; strong coarse prismatic structure; very hard, firm, sticky and plastic; common very fine and fine roots and few medium and coarse roots; many very fine and fine tubular pores; continuous moderately thick clay films on the faces of peds and in pores; about 10 percent pebbles and 5 percent cobbles; strongly acid (pH 5.3); clear wavy boundary.

B22t—25 to 31 inches; light yellowish brown (10YR 6/4) gravelly silty clay, dark yellowish brown (10YR 4/4) moist; moderate coarse prismatic structure; very hard, firm, sticky and plastic; common very fine and fine roots and few medium and coarse roots; many very fine and fine tubular pores; continuous moderately thick clay films on faces of peds and in pores; about 15 percent pebbles and 5 percent cobbles; medium acid (pH 5.6); abrupt wavy boundary.

B23t—31 to 60 inches; light yellowish brown (10YR 6/4) very cobbly silty clay, brown (10YR 4/3) moist; moderate medium angular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots and few medium roots; many very fine and fine tubular pores; many moderately thick clay films on the faces of peds and in pores; about 25 percent pebbles and 30 percent cobbles; medium acid (pH 5.7).

Depth to bedrock and thickness of the solum are 60 inches or more. Clay content in the control section is 40 to 55 percent.

A2 horizon: Clay content is 15 to 25 percent. Rock fragment content is 5 to 15 percent. Reaction is strongly acid to slightly acid.

B2t horizon: Texture is gravelly silty clay, gravelly clay, very cobbly silty clay, or very stony clay. Clay content is 40 to 55 percent. The upper part of the horizon is 15 to 30 percent rock fragments, and the lower part is 35 to 55 percent. Reaction is strongly acid to slightly acid.

Moonlight Series

The Moonlight series consists of very deep, well drained soils in concave areas on mountainsides. These soils formed in alluvium derived from loess and various kinds of sedimentary and metasedimentary rock. Slope is 20 to 60 percent. Elevation is 5,000 to 7,500 feet. Average annual precipitation is 16 to 22 inches, and average annual air temperature is 36 to 41 degrees F.

Typical pedon of a Moonlight silt loam in an area of Moonlight-Pavohroo complex, 30 to 60 percent slopes, about 6 miles east of Pocatello, about 365 feet south and 650 feet west of the northeast corner of sec. 23, T. 6 S., R. 35 E.

O1—2 inches to 1 inch; undecomposed leaves, twigs, and grasses.

O2—1 inch to 0; decomposed and partly decomposed leaves, twigs, and grasses.

A11—0 to 3 inches; very dark grayish brown (10YR 3/2) silt loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots and common coarse and medium roots; many very fine interstitial pores; about 10 percent pebbles; neutral (pH 6.8); clear smooth boundary.

A12—3 to 9 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; weak coarse and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common medium, fine, and very fine roots and few coarse roots; many very fine interstitial pores; about 10 percent pebbles; neutral (pH 6.8); clear smooth boundary.

A13—9 to 24 inches; dark brown (10YR 4/3) silt loam, very dark brown (10YR 2/2) moist; weak coarse and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine and very fine roots and few medium roots; many very fine interstitial pores and common medium and fine tubular pores; about 10 percent pebbles; neutral (pH 6.7); gradual smooth boundary.

B1—24 to 39 inches; brown (10YR 5/3) silt loam, very dark grayish brown (10YR 3/2) moist; weak coarse and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and very fine roots and few medium roots; common very fine and few fine tubular pores; about 10 percent pebbles; neutral (pH 6.7); gradual irregular boundary.

B2—39 to 54 inches; light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak coarse and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few medium, fine, and very fine roots; common very fine and few fine tubular pores; about 10 percent pebbles; neutral (pH 6.7); clear smooth boundary.

B3—54 to 60 inches; light yellowish brown (10YR 6/4) silt loam, brown (10YR 4/3) moist; weak coarse and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few medium, fine, and very fine roots; many very fine tubular pores; about 5 percent pebbles; neutral (pH 6.9).

The mollic epipedon is 30 to 45 inches thick. Depth to bedrock and thickness of the solum are 60 inches or more. Rock fragment content in the control section averages 5 to 10 percent. Clay content in the control section averages 12 to 18 percent.

A and B horizons: Rock fragment content is 5 to 10 percent. Reaction is medium acid to neutral.

Oxford Series

The Oxford series consists of very deep, moderately well drained soils on lake terraces. These soils formed in lake sediment and in alluvium derived from lake sediment. Slope is 2 to 12 percent. Elevation is 4,750 to 5,150 feet. Average annual precipitation is 15 to 18 inches, and average annual air temperature is 43 to 45 degrees F.

Typical pedon of an Oxford silty clay loam in an area of Oxford-Banida complex, 2 to 4 percent slopes, about 7 miles southeast of Swan Lake, about 2,400 feet east and 600 feet south of the northwest corner of sec. 18, T. 14 S., R. 39 E.

Ap—0 to 5 inches; reddish brown (5YR 5/3) silty clay loam, reddish brown (5YR 4/3) moist; weak fine subangular blocky structure parting to moderate fine granular; soft, friable, sticky and plastic; few fine and very fine roots; few fine and very fine tubular pores; moderately effervescent; mildly alkaline (pH 7.8); clear smooth boundary.

B1—5 to 11 inches; reddish brown (5YR 5/3) silty clay, reddish brown (5YR 4/3) moist; weak medium subangular blocky structure parting to moderate medium granular; hard, firm, very sticky and very plastic; few fine and very fine roots; few fine and very fine tubular pores; few 3/8- to 1/2-inch-wide vertical cracks filled with Ap material; moderately effervescent; mildly alkaline (pH 7.8); clear wavy boundary.

B21—11 to 16 inches; light reddish brown (5YR 6/3) silty clay, reddish brown (5YR 4/4) moist; strong fine subangular blocky structure; very hard, very firm, very sticky and very plastic; few fine and very fine roots; few fine and very fine tubular pores; common 3/8- to 1/2-inch-wide vertical cracks filled with Ap material; moderately effervescent; moderately alkaline (pH 7.9); clear smooth boundary.

B22—16 to 26 inches; light reddish brown (5YR 6/3) silty clay, reddish brown (5YR 4/4) moist; strong fine subangular blocky structure parting to moderate fine angular blocky; extremely hard, very firm, very sticky and very plastic; few fine roots; few fine and very fine tubular pores; common 3/8- to 1-inch-wide vertical cracks filled with Ap material; moderately effervescent; moderately alkaline (pH 8.1); clear smooth boundary.

B23—26 to 38 inches; light reddish brown (5YR 6/3) clay, reddish brown (5YR 4/4) moist; moderate medium and fine angular blocky structure; extremely hard, very firm, very sticky and very plastic; few fine and very fine tubular pores; common 3/8- to 1 1/8-inch-wide vertical cracks filled with Ap material; large pressure faces with very dark gray (5YR 3/1) organic stains; few fine distinct red (2.5YR 4/6) mottles; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

B3—38 to 47 inches; light yellowish brown (5YR 6/3) clay, reddish brown (5YR 4/4) moist; strong medium angular blocky structure; extremely hard, very firm, very sticky and very plastic; few fine and very fine tubular pores; common 3/4- to 1 1/8-inch-wide vertical cracks extending to a depth of 44 inches and filled with Ap material; cracks and pressure faces have very dark gray (5YR 3/1) stains; few fine prominent red (2.5YR 4/6) mottles; moderately effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

C—47 to 63 inches; pinkish gray (5YR 7/2) silty clay, reddish brown (5YR 5/3) moist; massive; extremely hard, very firm, very sticky and very plastic; few fine and very fine tubular pores; few very dark gray (5YR 3/1) organic stains along pressure faces; common fine gypsum crystals in veins; common medium distinct dark reddish brown (2.5YR 3/4) mottles; moderately effervescent in matrix; moderately alkaline (pH 8.0).

Bedrock is at a depth of 60 inches or more. The solum is 40 to 55 inches thick. Clay content in the control section averages 40 to 58 percent.

B and C horizons: Texture is silty clay or clay. Reaction is mildly alkaline or moderately alkaline.

Pavohroo Series

The Pavohroo series consists of very deep, well drained soils on mountainsides. These soils formed in silty alluvium and colluvium derived from loess and various kinds of sedimentary and metasedimentary rock. Slope is 8 to 60 percent. Elevation is 5,500 to 8,000 feet. Average annual precipitation is 22 to 28 inches, and average annual air temperature is 36 to 41 degrees F.

Typical pedon of a Pavohroo silt loam in an area of Pavohroo-Moonlight complex, 30 to 60 percent slopes, about 6 miles east of Pocatello, about 2,480 feet north and 420 feet west of the southeast corner of sec. 25, T. 6 S., R. 35 E.

O1—3 to 2 inches; partly decomposed needles, twigs, and leaves.

02—2 inches to 0; decomposed needles, twigs, and leaves.

A11—0 to 3 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots, common medium roots, and few coarse roots; many very fine interstitial pores; about 10 percent pebbles; neutral (pH 6.9); abrupt smooth boundary.

A12—3 to 10 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; weak medium and fine subangular blocky structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots, common medium roots, and few coarse roots; many very fine interstitial pores; about 10 percent pebbles; neutral (pH 6.9); clear smooth boundary.

A13—10 to 17 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; weak coarse subangular blocky structure parting to weak medium and fine subangular blocky; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots, common medium roots, and few coarse roots; common very fine tubular pores; about 10 percent pebbles; neutral (pH 6.8); clear wavy boundary.

A14—17 to 26 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; weak coarse subangular blocky structure parting to weak medium and fine subangular blocky; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots and few coarse and medium roots; many very fine and few fine tubular pores; about 5 percent pebbles and 5 percent cobbles; neutral (pH 6.9); abrupt irregular boundary.

B2—26 to 60 inches; pale brown (10YR 6/3) stony loam, brown (10YR 4/3) moist; weak medium and fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots and few medium and fine roots; many very fine tubular pores; about 10 percent pebbles, 10 percent cobbles, and 5 percent stones; neutral (pH 7.3).

Bedrock is at a depth of 60 inches or more. The mollic epipedon is 20 to 30 inches thick. Rock fragment content commonly increases with depth, but it averages less than 35 percent by volume in the 10- to 40-inch control section. Clay content in the control section averages 18 to 25 percent.

A horizon: Rock fragment content is 0 to 10 percent. Reaction is slightly acid or neutral.

B horizon: Texture is loam, gravelly loam, or stony loam. Rock fragment content is 10 to 30 percent. Reaction is neutral to moderately alkaline.

Pocatello Series

The Pocatello series consists of very deep, well drained soils on foothills and fan terraces. These soils formed in loess and silty alluvium derived from loess. Slope is 1 to 50 percent. Elevation is 4,400 to 5,200 feet. Average annual precipitation is 10 to 13 inches, and average annual air temperature is 45 to 51 degrees F.

Typical pedon of Pocatello silt loam, 1 to 4 percent slopes, about 3.5 miles north of Pocatello, about 2,610 feet north and 2,460 feet west of the southeast corner of sec. 25, T. 5 S., R. 34 E.

A1—0 to 8 inches; grayish brown (10YR 5/2) silt loam, brown (10YR 4/3) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and very fine roots; common very fine tubular pores; slightly effervescent; mildly alkaline (pH 7.6); clear smooth boundary.

C1—8 to 21 inches; pale brown (10YR 6/3) silt loam, yellowish brown (10YR 5/4) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and very fine roots; common very fine tubular pores; slightly effervescent; moderately alkaline (pH 7.9); gradual smooth boundary.

C2ca—21 to 40 inches; very pale brown (10YR 7/3) silt loam, pale brown (10YR 6/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular pores; about 10 to 15 percent hard rounded cicada krotovinas; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

C3—40 to 60 inches; pale brown (10YR 6/3) silt loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; strongly effervescent; strongly alkaline (pH 8.7).

Clay content in the control section averages 5 to 15 percent.

A horizon: Reaction is neutral to moderately alkaline.

C horizon: Texture is silt loam or silt. The upper part of the horizon is moderately alkaline or strongly alkaline, and the lower part is moderately alkaline to very strongly alkaline and moderately saline or strongly saline.

Portino Series

The Portino series consists of moderately deep, well drained soils on lava flows. These soils formed in loess, in silty alluvium derived from loess, and in material weathered from basalt. Slope is 0 to 2 percent. Elevation is 4,500 to 4,600 feet. Average annual precipitation is 11 to 13 inches, and average annual air temperature is 46 to 48 degrees F.

Typical pedon of a Portino silt loam in an area of Portino-Thornock complex, 0 to 2 percent slopes, about 0.25 mile south of Pocatello, about 1,760 feet north and 900 feet east of the southwest corner of sec. 6, T. 7 S., R. 35 E.

A1—0 to 3 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak medium and fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and common fine roots; many very fine tubular and interstitial pores; 5 percent or less rock fragments, mostly pebbles; slightly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

B2—3 to 9 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; weak coarse and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; many very fine tubular pores; strongly effervescent; moderately alkaline (pH 8.1); clear smooth boundary.

C1ca—9 to 22 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; massive; hard, friable, slightly sticky and slightly plastic; many very fine roots; many very fine tubular pores; about 10 percent hard cicada krotovinas; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

C2—22 to 29 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; massive; hard, friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular pores; about 3 percent pebbles; strongly effervescent; moderately alkaline (pH 8.1); abrupt wavy boundary.

IIR—29 inches; basalt.

Bedrock is at a depth of 20 to 40 inches. Secondary lime is at a depth of 6 to 15 inches. Clay content in the control section averages 10 to 16 percent.

A and B horizons: Reaction is mildly alkaline or moderately alkaline. Rock fragment content is 0 to 5 percent.

C horizon: Reaction is moderately alkaline or strongly alkaline. Rock fragment content is 0 to 5 percent.

These soils are taxadjunct to the Portino series because the moisture control section is moist for a longer period than is typical for the series. This difference, however, does not significantly affect use and management.

Rexburg Series

The Rexburg series consists of very deep, well drained soils on foothills and fan terraces. These soils formed in loess and in silty alluvium derived from loess. Slope is 1 to 50 percent. Elevation is 5,000 to 6,200 feet. Average annual precipitation is 14 to 16 inches, and average annual air temperature is 40 to 45 degrees F.

Typical pedon of Rexburg silt loam, 1 to 4 percent slopes (fig. 13), about 1.5 miles southeast of Arimo, about 2,000 feet east and 150 feet north of the southwest corner of sec. 20, T. 10 S., R. 37 E.

A11—0 to 4 inches; grayish brown (10YR 5/2) silt loam, very dark brown (10YR 2/2) moist; moderate medium and fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and medium roots; common fine and very fine interstitial pores; neutral (pH 7.2); clear smooth boundary.

A12—4 to 10 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and medium roots; many fine and very fine tubular pores; mildly alkaline (pH 7.6); clear smooth boundary.

B1—10 to 18 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; common fine and very fine tubular pores; mildly alkaline (pH 7.4); gradual smooth boundary.

B2—18 to 26 inches; grayish brown (10YR 5/2) silt loam, dark grayish brown (10YR 4/2) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; common fine and very fine tubular pores; neutral (pH 7.2); clear smooth boundary.

C1ca—26 to 46 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; massive; slightly hard,

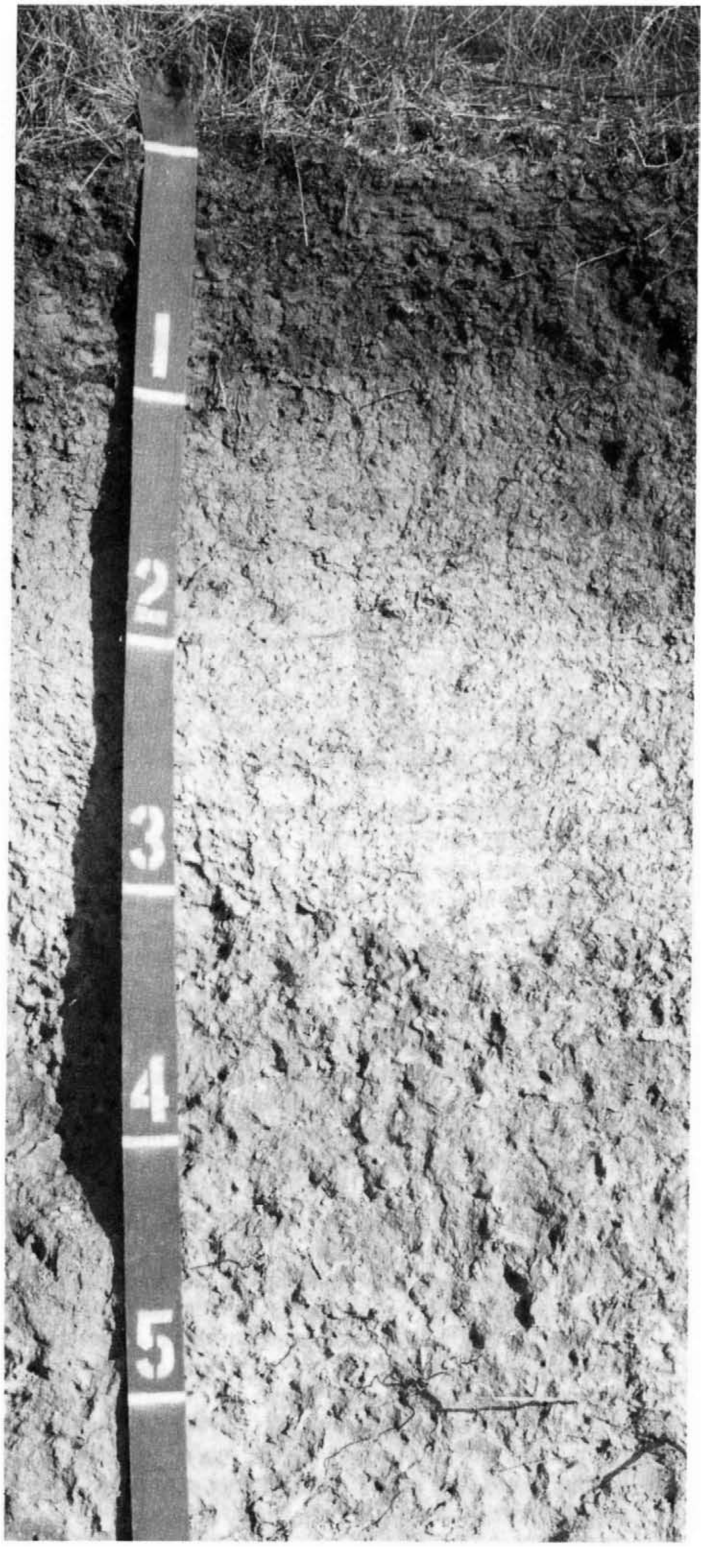

Figure 13.—Profile of Rexburg silt loam, 1 to 4 percent slopes.

friable, slightly sticky and slightly plastic; few fine and medium roots; common fine and very fine tubular pores; violently effervescent; mildly alkaline (pH 7.8); gradual smooth boundary.

C2ca—46 to 60 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; common fine and very fine tubular pores; strongly effervescent; moderately alkaline (pH 7.6).

The solum is 18 to 35 inches thick. Secondary lime is at a depth of 18 to 35 inches. Clay content in the control section averages 13 to 16 percent.

A horizon: Reaction is slightly acid to mildly alkaline.

B horizon: Reaction is neutral or mildly alkaline.

C horizon: Reaction is mildly alkaline or moderately alkaline.

Ricrest Series

The Ricrest series consists of very deep, well drained soils on foothills and mountainsides. These soils formed in colluvium and alluvium derived from mixed sources, dominantly quartzite and limestone. Slope is 20 to 50 percent. Elevation is 5,500 to 6,500 feet. Average annual precipitation is 16 to 20 inches, and average annual air temperature is 41 to 45 degrees F.

Typical pedon of a Ricrest gravelly silt loam in an area of Cedarhill, high precipitation-Hades-Ricrest complex, 20 to 50 percent slopes, about 5 miles south of Lava Hot Springs, about 500 feet south and 2,440 feet east of the northwest corner of sec. 22, T. 10 S., R. 38 E.

A11—0 to 3 inches; dark grayish brown (10YR 4/2) gravelly silt loam, very dark brown (10YR 2/2) moist; moderate fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; many very fine interstitial pores; about 15 percent pebbles; mildly alkaline (pH 7.5); abrupt smooth boundary.

A12—3 to 10 inches; dark brown (10YR 4/3) gravelly silt loam, very dark grayish brown (10YR 3/2) moist; moderate medium and fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine roots and common coarse and medium roots; many very fine interstitial pores; about 15 percent pebbles; mildly alkaline (pH 7.7); clear smooth boundary.

B21—10 to 14 inches; brown (10YR 5/3) gravelly silt loam, dark brown (10YR 3/3) moist; weak medium and fine subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common medium and fine roots and few coarse roots; few fine tubular pores; about 15 percent pebbles; mildly alkaline (pH 7.7); clear smooth boundary.

B22—14 to 24 inches; brown (10YR 5/3) gravelly silt loam, dark brown (10YR 3/3) moist; weak medium and fine subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common medium and fine roots; many very fine, common fine, and few medium tubular pores; about 15 percent pebbles; slightly effervescent; mildly alkaline (pH 7.8); clear smooth boundary.

C1ca—24 to 31 inches; pale brown (10YR 6/3) gravelly silt loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common medium and fine roots; about 20 percent pebbles and 5 percent cobbles; violently effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

C2ca—31 to 60 inches; very pale brown (10YR 7/3) gravelly silt loam, light yellowish brown (10YR 6/4) moist; massive; hard, firm, slightly sticky and slightly plastic; common fine and few medium roots; about 20 percent pebbles and 5 percent cobbles; strongly effervescent; moderately alkaline (pH 8.1).

Bedrock is at a depth of 60 inches or more. The mollic epipedon is 20 to 30 inches thick. Lime is at a depth of 12 to 20 inches. Rock fragment content commonly increases with depth, but it averages less than 35 percent by volume in the 10-to 40-inch control section. Clay content in the control section averages 18 to 22 percent.

A and B horizons: Rock fragment content is 15 to 20 percent.

C horizon: Rock fragment content is 15 to 35 percent. Reaction is mildly alkaline or moderately alkaline.

Ridgecrest Series

The Ridgecrest series consists of moderately deep, well drained soils on foothills and mountainsides. These soils formed in alluvium and colluvium derived dominantly from limestone. Slope is 20 to 50 percent. Elevation is 5,100 to 6,500 feet. Average annual precipitation is 14 to 18 inches, and average annual air temperature is 42 to 45 degrees F.

Typical pedon of a Ridgecrest extremely stony silt loam in an area of Cedarhill, high precipitation-Hondoho-Ridgecrest complex, 20 to 50 percent slopes, about 6 miles northwest of Hawkins Reservoir, about 140 feet north and 1,855 feet west of the southeast corner of sec. 32, T. 9 S., R. 35 E.

A11—0 to 4 inches; dark grayish brown (10YR 4/2) extremely stony silt loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and common fine roots; many very fine interstitial pores; about 30 percent pebbles, 20 percent cobbles, and 15 percent stones; thick lime coatings on the underside of rock fragments; slightly effervescent; mildly alkaline (pH 7.6); clear wavy boundary.

A12—4 to 14 inches; brown (10YR 5/3) extremely stony silt loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; many very fine interstitial pores; about 30 percent pebbles, 10 percent cobbles, and 25 percent stones; thick lime coatings on the underside of rock fragments; strongly effervescent; mildly alkaline (pH 7.6); clear irregular boundary.

C1ca—14 to 19 inches; pale brown (10YR 6/3) extremely stony silt loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; many very fine interstitial pores; about 10 percent pebbles, 15 percent cobbles, and 45 percent stones; thick lime coatings on the underside of rock fragments; violently effervescent; mildly alkaline (pH 7.5); gradual irregular boundary.

C2ca—19 to 27 inches; pale brown (10YR 6/3) extremely stony silt loam, dark brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky, and slightly plastic; common very fine and few fine roots that follow the wide cracks in the weathered and fractured limestone; many very fine interstitial pores; about 10 percent pebbles, 20 percent cobbles, and 55 percent stones; thick lime coatings on the underside of rock fragments; violently effervescent; mildly alkaline (pH 7.5); abrupt irregular boundary.

R—27 inches; gray limestone.

Bedrock is at a depth of 20 to 40 inches. Lime content in the control section averages 40 to 70 percent.

A horizon: Rock fragment content is 60 to 70 percent.

C horizon: Texture is extremely stony silt loam or extremely stony loam. Rock fragments, dominantly stones, make up 70 to 90 percent of the horizon. Reaction is mildly alkaline or moderately alkaline.

These soils are taxadjunct to the Ridgecrest series because a concentration of secondary lime is in the C horizon. This difference, however, does not significantly affect use and management.

Ririe Series

The Ririe series consists of very deep, well drained soils on mountainsides, foothills, and fan terraces. These soils formed in loess and in silty alluvium derived from loess. Slope is 1 to 60 percent. Elevation is 4,600 to 6,500 feet. Average annual precipitation is 13 to 16 inches, and average annual air temperature is 40 to 46 degrees F.

Typical pedon of Ririe silt loam, 4 to 12 percent slopes, about 5.5 miles southwest of Downey, about 1,950 feet south and 865 feet west of the northeast corner of sec. 10, T. 12 S., R. 36 E.

Ap—0 to 5 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak medium and thick platy structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and very fine roots; few very fine interstitial pores; neutral (pH 7.2); clear smooth boundary.

A12—5 to 12 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; few very fine tubular and interstitial pores; neutral (pH 7.1); clear smooth boundary.

C1ca—12 to 26 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; few very fine tubular and interstitial pores; 15 to 20 percent slightly hard cicada krotovinas; violently effervescent; mildly alkaline (pH 7.4); gradual smooth boundary.

C2ca—26 to 43 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; violently effervescent; 10 percent slightly hard cicada krotovinas; mildly alkaline (pH 7.6); clear smooth boundary.

C3ca—43 to 60 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; violently effervescent; moderately alkaline (pH 8.0).

The mollic epipedon is 7 to 16 inches thick. Lime is at a depth of 7 to 16 inches. Clay content in the control section averages 12 to 18 percent.

A horizon: Reaction is neutral to moderately alkaline.

C horizon: Reaction is mildly alkaline to strongly alkaline.

Scout Variant

The Scout Variant consists of very deep, well drained soils on mountainsides. These soils formed in alluvium and colluvium derived dominantly from quartzite. Slope is 30 to 60 percent. Elevation is 7,500 to 9,200 feet. Average annual precipitation is 25 to 35 inches, and average annual air temperature is 35 to 39 degrees F.

Typical pedon of a Scout Variant gravelly silt loam in an area of Scout Variant-Camelback Variant association, 30 to 60 percent slopes, about 1 mile west of Baldy Mountain, about 2,300 feet north and 2,200 feet west of the southeast corner of sec. 13, T. 10 S., R. 38 E.

O1—2 inches to 1 inch; partly decomposed organic material.

O2—1 inch to 0; decomposed organic material.

A1—0 to 3 inches; brown (10YR 5/3) gravelly silt loam, dark brown (7.5YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, medium, and coarse roots; many very fine interstitial pores; about 15 percent pebbles and 5 percent cobbles; medium acid (pH 5.8); abrupt smooth boundary.

A2—3 to 16 inches; pale brown (10YR 6/3) very cobbly silt loam, brown (10YR 4/3) moist; weak coarse and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine, medium, and coarse roots; many very fine and fine tubular pores; about 15 percent pebbles, 30 percent cobbles, and 10 percent stones; medium acid (pH 5.6); gradual wavy boundary.

B21—16 to 30 inches; light yellowish brown (10YR 6/4) extremely stony silt loam, dark yellowish brown (10YR 4/4) moist; weak coarse and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine, medium, and coarse roots; many very fine and fine tubular pores; about 20 percent pebbles, 35 percent cobbles, and 20 percent stones; medium acid (pH 5.9); clear wavy boundary.

B22—30 to 60 inches; light yellowish brown (10YR 6/4) extremely cobbly loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; common very fine and fine tubular pores; about 20 percent pebbles, 35 percent cobbles, and 10 percent stones; strongly acid (pH 5.5).

The control section is 45 to 75 percent rock fragments. Clay content is 10 to 20 percent. Bedrock is at a depth of 60 inches or more.

A1 horizon: Rock fragment content is 15 to 25 percent. Reaction is strongly acid to slightly acid.

A2 horizon: Texture is very cobbly silt loam or very cobbly loam. Rock fragment content is 40 to 60 percent. Reaction is strongly acid to slightly acid.

B2 horizon: Texture is extremely stony silt loam, extremely cobbly loam, or very cobbly silt loam. Rock fragment content is 55 to 80 percent. Reaction is strongly acid to slightly acid.

Sedgway Series

The Sedgway series consists of very deep, well drained soils on mountainsides. These soils formed in alluvium and colluvium derived from sedimentary and metasedimentary rock. Slope is 8 to 60 percent. Elevation is 6,000 to 8,000 feet. Average annual precipitation is 22 to 30 inches, and average annual air temperature is 36 to 41 degrees F.

Typical pedon of a Sedgway gravelly silt loam in an area of Sedgway-Beaverdam complex, 30 to 60 percent slopes, about 5.5 miles southeast of Arimo, about 100 feet north and 945 feet west of the southeast corner of sec. 19, T. 10 S., R. 38 E.

O1—2 inches to 1 inch; undecomposed needles, leaves, twigs, and grass.

O2—1 inch to 0; decomposed and partly decomposed needles, leaves, twigs, and grass.

A11—0 to 5 inches; very dark grayish brown (10YR 3/2) gravelly silt loam, black (10YR 2/1) moist; weak coarse subangular blocky structure parting to weak fine subangular blocky; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots and common coarse and medium roots; many very fine tubular pores and common very fine interstitial pores; about 15 percent pebbles and 5 percent cobbles; medium acid (pH 5.7); abrupt smooth boundary.

A12—5 to 12 inches; dark grayish brown (10YR 4/2) very cobbly silt loam, very dark brown (10YR 2/2) moist; weak coarse and medium subangular blocky structure parting to weak fine subangular blocky; soft, very friable, slightly sticky and slightly plastic; common coarse, fine, and very fine roots and few medium roots; many very fine tubular pores and few very fine interstitial pores; about 15 percent pebbles, 20 percent cobbles, and 10 percent stones; medium acid (pH 5.7); clear smooth boundary.

A2—12 to 21 inches; pale brown (10YR 6/3) very cobbly loam, brown (10YR 4/3) moist; weak coarse and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common coarse roots and few medium, fine, and very fine roots; common very fine tubular pores; about 15 percent pebbles, 30 percent cobbles, and 10 percent stones; medium acid (pH 6.0); clear wavy boundary.

B&A—21 to 27 inches; 80 percent yellowish brown (10YR 5/4) very cobbly clay loam, dark yellowish brown (10YR 3/4) moist; 20 percent pale brown (10YR 6/3) very cobbly loam, dark yellowish brown (10YR 4/4) moist, A2 material is in pockets and as coatings on the faces of peds; moderate coarse and medium angular blocky structure; hard, firm, very sticky and very plastic; common coarse roots and few medium, fine, and very fine roots; common very fine and few fine tubular pores; common moderately thick clay films on the faces of peds and in pores; about 20 percent pebbles, 25 percent cobbles, and 10 percent stones; medium acid (pH 6.0); gradual wavy boundary.

B21t—27 to 32 inches; yellowish brown (10YR 5/4) very cobbly clay loam, dark yellowish brown (10YR 3/4) moist; moderate coarse and medium angular blocky structure; hard, firm, very sticky and very plastic; few medium, fine, and very fine roots; common very fine tubular pores; many moderately thick clay films on the faces of peds and in pores; about 20 percent pebbles, 25 percent cobbles, and 10 percent stones; slightly acid (pH 6.3); gradual wavy boundary.

B22t—32 to 60 inches; yellowish brown (10YR 5/4) very cobbly clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium angular blocky structure; hard, firm, sticky and plastic; few medium, fine, and very fine roots; common very fine tubular pores; continuous moderately thick clay films on the faces of peds and in pores; about 15 percent pebbles, 25 percent cobbles, and 10 percent stones; slightly acid (pH 6.3).

Depth to bedrock and thickness of the solum are 60 inches or more. The control section is 40 to 60 percent rock fragments. Clay content in the control section is 27 to 34 percent.

A1 horizon: The upper part of the horizon is 15 to 25 percent rock fragments, and the lower part is 35 to 55 percent. Clay content is 15 to 25 percent. Reaction is medium acid or slightly acid.

A2 horizon: The horizon is 35 to 55 percent rock fragments and 15 to 25 percent clay. Reaction is medium acid or slightly acid.

B2t horizon: The horizon is 40 to 60 percent rock fragments and 27 to 34 percent clay. Reaction is medium acid or slightly acid.

Swanner Series

The Swanner series consists of shallow, well drained soils on mountainsides and ridges. These soils formed in loess, silty alluvium, and material weathered from andesite or other related igneous rock. Slope is 12 to 80 percent. Elevation is 4,500 to 6,000 feet. Average annual precipitation is 12 to 16 inches, and average annual air temperature is 42 to 45 degrees F.

Typical pedon of a Swanner extremely stony loam in an area of Watercanyon-Swanner-Rock outcrop complex, 20 to 50 percent slopes, about 2 miles west of Pocatello, about 1,735 feet east and 1,860 feet north of the southwest corner of sec. 20, T. 6 S., R. 34 E.

A11—0 to 9 inches; dark brown (10YR 4/3) extremely stony loam, very dark grayish brown (10YR 3/2) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many coarse, medium, and fine roots and common very fine roots; many very fine interstitial pores; about 30 percent pebbles, 20 percent cobbles, and 15 percent stones; mildly alkaline (pH 7.5); clear smooth boundary.

B2—9 to 17 inches; yellowish brown (10YR 5/4) extremely stony loam, dark brown (10YR 3/3) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many coarse, medium, and fine roots and few very fine roots; many very fine interstitial pores and common very fine tubular pores; about 30 percent pebbles, 20 percent cobbles, and 15 percent stones; thin lime coatings on some rock fragments and spots of slightly calcareous soil material; mildly alkaline (pH 7.5); abrupt irregular boundary.

R—17 inches; andesite with thin lime coatings at soil contact.

Bedrock is at a depth of 10 to 20 inches. Lime is at a depth of 9 to 20 inches.

A1 horizon: Rock fragment content is 60 to 80 percent. Reaction is mildly alkaline or moderately alkaline.

B horizon: Texture is extremely stony loam or very stony loam. Rock fragment content is 50 to 75 percent. Reaction is mildly alkaline or moderately alkaline.

Cca horizon: This horizon is present only in some pedons. Texture is very stony loam or extremely stony loam. Rock fragment content is 50 to 75 percent. Calcium carbonate equivalent is 3 to 15 percent. Reaction is mildly alkaline or moderately alkaline.

Tendoy Series

The Tendoy series consists of very deep, very poorly drained soils on flood plains. These soils formed in organic material derived dominantly from herbaceous plants. Slope is 0 to 1 percent. Elevation is 4,550 to 4,750 feet. Average annual precipitation is 12 to 16 inches, and average annual air temperature is 41 to 45 degrees F.

Typical pedon of Tendoy muck, drained, 0 to 1 percent slopes, about 4.5 miles northwest of Downey, about 2,450 feet south and 800 feet east of the northwest corner of sec. 24, T. 11 S., R. 36 E.

C—0 to 2 inches; grayish brown (10YR 5/2, silt loam) very dark grayish brown (2.5Y 3/2) moist; weak fine platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many very fine interstitial pores; slightly effervescent; mildly alkaline (pH 7.7); abrupt smooth boundary.

Oa1—2 to 7 inches; black (N 2/0, on broken face and rubbed) sapric material; about 10 percent fibers, about 5 percent after rubbing; weak medium granular structure; many very fine, fine, and medium roots; slightly effervescent; slightly acid (pH 6.4); abrupt smooth boundary.

Oa2—7 to 10 inches; black (10YR 2/1, on broken face and rubbed) sapric material; about 30 percent fibers, about 10 percent after rubbing; massive; many very fine, fine, and medium roots; neutral (pH 7.0); gradual smooth boundary.

Oa3—10 to 15 inches; black (N 2/0, on broken face and rubbed) sapric material; about 25 percent fibers, about 5 percent after rubbing; massive; common very fine, fine, and medium roots; slightly acid (pH 6.5); abrupt smooth boundary.

Oa4—15 to 19 inches; black (N 2/0, on broken face and rubbed) sapric material; about 25 percent fibers, about 10 percent after rubbing; common very fine, fine, and medium roots; slightly acid (pH 6.5); abrupt smooth boundary.

Oa5—19 to 23 inches; black (10YR 2/1, on broken face and rubbed) sapric material; about 30 percent fibers, about 15 percent after rubbing; massive; common very fine, fine, and medium roots; neutral (pH 6.6); abrupt smooth boundary.

Oa6—23 to 41 inches; black (N 2/0, on broken face and rubbed) sapric material; about 10 percent fibers, less than 5 percent after rubbing; massive; few very fine, fine, and medium roots; slightly acid (pH 6.1); clear smooth boundary.

Oa7—41 to 47 inches; black (N 2/0, on broken face and rubbed) sapric material; about 10 percent fibers, less than 5 percent after rubbing; massive; few very fine roots; medium acid (pH 5.6); abrupt smooth boundary.

Oa8—47 to 60 inches; black (N 2/0, on broken face and rubbed) sapric material; about 5 percent fibers, less than 5 percent after rubbing; massive; few very fine roots; medium acid (pH 6.0).

The organic material is more than 60 inches thick. Lime is generally present in the upper part of the surface tier.

Surface tier: Generally a thin mineral layer of recent alluvium 1 to 3 inches thick is on the surface. The surface tier is mostly sapric material, but in some pedons it has thin layers of hemic or fibric material. Reaction is slightly acid to mildly alkaline.

Subsurface tier: The subsurface tier is mostly sapric material, but some pedons have a thin layer of hemic or fibric material or a thin discontinuous, mineral layer. Reaction is slightly acid or neutral.

Bottom tier: The bottom tier is mostly sapric material, but some pedons have a thin layer of hemic or fibric material or a thin, discontinuous mineral layer. Reaction is medium acid or slightly acid.

Thornock Series

The Thornock series consists of shallow, well drained soils on basalt flows. These soils formed in a mixture of loess, silty alluvium derived from loess, and material weathered from basalt. Slope is 0 to 2 percent. Elevation is 4,500 to 4,600 feet. Average annual precipitation is 11 to 13 inches, and average annual air temperature is 46 to 48 degrees F.

Typical pedon of a Thornock stony silt loam in an area of Portino-Thornock complex, 0 to 2 percent slopes, about 1 mile southeast of Pocatello, about 1,980 feet north and 900 feet east of the southwest corner of sec. 6, T. 7 S., R. 35 E.

A11—0 to 2 inches; grayish brown (10YR 5/2) stony silt loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine interstitial pores; slightly effervescent; about 15 percent stones on the surface; mildly alkaline (pH 7.8); abrupt smooth boundary.

A12—2 to 7 inches; light brownish gray (10YR 6/2) silt loam, dark brown (10YR 3/3) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine and fine tubular pores; about 5 percent pebbles; slightly effervescent; moderately alkaline (pH 7.9); clear smooth boundary.

C—7 to 14 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine and fine tubular pores; about 5 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); abrupt irregular boundary.

R—14 inches; basalt.

Bedrock is at a depth of 10 to 20 inches. The control section averages 5 to 10 percent rock fragments.

A11 horizon: The horizon is 10 to 20 percent stones, which are concentrated on the surface. Reaction is mildly alkaline or moderately alkaline.

A12 horizon: Reaction is mildly alkaline or moderately alkaline. Rock fragment content is 5 to 10 percent.

C horizon: Reaction is mildly alkaline or moderately alkaline. Rock fragment content is 5 to 10 percent.

These soils are taxadjunct to the Thornock series because they do not have a calcic horizon. This difference, however, does not significantly affect use and management.

Toponce Series

The Toponce series consists of very deep, well drained soils on mountainsides, foothills, and fan terraces. These soils formed in alluvium derived dominantly from sedimentary and metasedimentary rock, predominantly sandstone and quartzite. Slope is 6 to 30 percent. Elevation is 5,500 to 6,900 feet. Average annual precipitation is 20 to 28 inches, and average annual air temperature is 37 to 41 degrees F.

Typical pedon of a Toponce silt loam in an area of Toponce-Broadhead association, 6 to 30 percent slopes, about 2 miles northeast of Cottonwood Peak, about 2,450 feet east and 300 feet north of the southwest corner of sec. 29, T. 11 S., R. 39 E.

A1—0 to 3 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; moderate fine granular structure; soft, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine interstitial pores; about 10 percent rock fragments, mostly pebbles; slightly acid (pH 6.3); clear smooth boundary.

A3—3 to 14 inches; dark grayish brown (10YR 4/2) silty clay loam, very dark brown (10YR 2/2) moist; strong medium, fine, and very fine subangular blocky structure; hard, firm, sticky and plastic; many very fine and fine roots and few medium roots; many very fine tubular pores and interstitial pores; about 5 percent gravel; slightly acid (pH 6.3); clear smooth boundary.

B1t—14 to 21 inches; dark brown (10YR 4/3) silty clay loam, very dark grayish brown (10YR 3/2) moist; strong fine and very fine subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots and few medium roots; common very fine tubular pores and few interstitial pores; few thin clay films in pores and on faces of peds; about 5 percent rock fragments, mostly pebbles; medium acid (pH 5.8); clear smooth boundary.

B21t—21 to 28 inches; brown (10YR 5/3) silty clay, dark yellowish brown (10YR 4/4) moist; moderate medium prismatic structure parting to strong medium angular blocky; very hard, very firm, sticky and plastic; common very fine roots and few fine and medium roots, mostly along faces of peds and in cracks; common very fine tubular pores; many moderately thick clay films in pores and on faces of peds; about 5 percent rock fragments, mostly pebbles; medium acid (pH 5.8); clear smooth boundary.

B22t—28 to 60 inches; brown (10YR 5/3) clay, dark yellowish brown (10YR 4/4) moist; moderate coarse prismatic structure; extremely hard, extremely firm, very sticky and very plastic; few very fine, fine, and medium roots along faces of peds and in cracks; common very fine tubular pores; many moderately thick clay films in pores and on faces of peds; about 2 percent rock fragments, mostly pebbles; medium acid (pH 5.9).

The mollic epipedon is 18 to 25 inches thick. Depth to bedrock and thickness of the solum are 60 inches or more. Clay content in the control section averages 35 to 55 percent.

A1 horizon: Clay content is 15 to 25 percent. Rock fragment content is 0 to 10 percent. Reaction is medium acid or slightly acid.

A3 horizon: Texture is silt loam or silty clay loam. Clay content is 20 to 30 percent. Rock fragment content is 0 to 10 percent. Reaction is medium acid or slightly acid.

Bt horizon: Texture is silty clay loam, silty clay, or clay. Clay content is 35 to 55 percent. Rock fragment content is 0 to 10 percent. Reaction is medium acid or slightly acid.

Trailcreek Series

The Trailcreek series consists of well drained soils on mountainsides, foothills, and terraces. These soils are moderately deep to paralithic contact. They formed in alluvium and residuum derived from consolidated volcanic ash. Slope is 12 to 50 percent. Elevation is 4,800 to 6,000 feet. Average annual precipitation is 14 to 18 inches, and average annual air temperature is 41 to 45 degrees F.

Typical pedon of a Trailcreek very fine sandy loam in an area of Coalbank-Trailcreek-Lonigan complex, 20 to 50 percent slopes, about 9.5 miles west of Arimo, about 2,000 feet east and 900 feet south of the northwest corner of sec. 15, T. 10 S., R. 35 E.

A1—0 to 4 inches; grayish brown (10YR 5/2) very fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium and fine subangular blocky structure parting to weak fine granular; soft, very friable, nonsticky and slightly plastic; many very fine, common fine, and few medium roots; many very fine interstitial pores and many very fine tubular pores; neutral (pH 6.6); abrupt wavy boundary.

B1—4 to 12 inches; grayish brown (10YR 5/2) very fine sandy loam, dark brown (10YR 3/3) moist; weak medium and fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; many very fine interstitial pores and common very fine tubular pores; neutral (pH 6.8); clear wavy boundary.

B2—12 to 20 inches; grayish brown (10YR 5/2) very fine sandy loam, dark brown (10YR 3/3) moist; weak coarse and medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; many very fine interstitial pores and common fine tubular pores; neutral (pH 6.8); clear wavy boundary.

B3—20 to 26 inches; light brownish gray (10YR 6/2) very fine sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; 20 to 45 percent pebble- and cobble-sized fragments of weakly consolidated volcanic ash; many very fine, common fine, and few medium roots; many very fine interstitial pores and many very fine tubular pores; neutral (pH 6.7); abrupt wavy boundary.

Cr—26 inches; light gray (2.5Y 7/0) consolidated volcanic ash, gray (2.5Y 6/0) moist.

Paralithic contact is at a depth of 20 to 40 inches. Vitric volcanic ash content in the control section averages 70 to 90 percent.

A horizon: Reaction is neutral or mildly alkaline.

B horizon: Reaction is neutral to moderately alkaline.

Valmar Series

The Valmar series consists of moderately deep, well drained soils on mountainsides and ridges. These soils formed in alluvium, colluvium, and residuum derived dominantly from quartzite and other related metasedimentary rock. Slope is 20 to 80 percent. Elevation is 4,500 to 7,000 feet. Average annual precipitation is 16 to 20 inches, and average annual air temperature is 39 to 45 degrees F.

Typical pedon of a Valmar very cobbly silt loam in an area of Valmar-Camelback-Hades complex, 30 to 60 percent slopes, about 1.5 miles southwest of Pocatello, about 630 feet south and 2,055 feet east of the northwest corner of sec. 4, T. 7 S., R. 34 E.

A11—0 to 4 inches; dark brown (10YR 4/3) very cobbly silt loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; many very fine interstitial pores; about 15 percent pebbles, 20 percent cobbles, and 5 percent stones; neutral (pH 7.3); clear smooth boundary.

A12—4 to 9 inches; brown (10YR 5/3) very cobbly silt loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; many very fine interstitial pores; about 25 percent pebbles, 20 percent cobbles, and 5 percent stones; neutral (pH 7.3); clear smooth boundary.

B2t—9 to 14 inches; yellowish brown (10YR 5/4) very cobbly silt loam, dark yellowish brown (10YR 3/4) moist; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few fine roots; many very fine interstitial pores and few very fine tubular pores; few thin clay films in pores and on faces of peds; about 25 percent pebbles, 20 percent cobbles, and 5 percent stones; mildly alkaline (pH 7.6); abrupt irregular boundary.

B3—14 to 24 inches; yellowish brown (10YR 5/4) extremely stony silt loam, dark yellowish brown (10YR 3/4) moist; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and very fine roots; few very fine tubular pores; about 5 percent pebbles, 5 percent cobbles, and 75 percent stones; soil material and roots are restricted to vertical and horizontal fractures through the weathered rock; few thin lime coatings on rock fragments; mildly alkaline (pH 7.7); abrupt irregular boundary.

R—24 inches; quartzite.

Depth to bedrock and thickness of the solum are 20 to 40 inches.

A horizon: Rock fragment content is 35 to 50 percent. Clay content is 13 to 20 percent. Texture is extremely stony or very cobbly silt loam. Reaction is slightly acid or neutral.

B horizon: Rock fragment content is 50 to 85 percent. The upper part of the horizon is very cobbly silt loam or very stony silt loam, and the lower part is extremely stony silt loam or extremely flaggy silt loam. Clay content is 20 to 27 percent. Reaction is neutral or mildly alkaline.

Valmar Variant

The Valmar Variant consists of moderately deep, well drained soils on the upper part of mountainsides and on ridgetops. These soils formed in residuum, alluvium, and colluvium derived from various kinds of sedimentary and metasedimentary rock, dominantly quartzite and sandstone. Slope is 20 to 60 percent. Elevation is 7,000 to 9,200 feet. Average annual precipitation is 18 to 22 inches, and average annual air temperature is 37 to 41 degrees F.

Typical pedon of a Valmar Variant very stony silt loam in an area of Camelback Variant-Valmar Variant complex, 20 to 60 percent slopes, about 0.5 mile south of Baldy Mountain, about 1,850 feet north and 1,175 feet west of the southeast corner of sec. 19, T. 10 S., R. 39 E.

A11—0 to 4 inches; dark brown (10YR 3/3) very stony silt loam, very dark grayish brown (10YR 3/2) moist; weak medium platy structure parting to weak very fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine and fine interstitial pores and common very fine tubular pores; about 15 percent pebbles, 10 percent cobbles, and 10 percent stones; slightly acid (pH 6.4); clear smooth boundary.

A12—4 to 9 inches; dark brown (10YR 3/3) very stony silt loam, very dark grayish brown (10YR 3/2) moist; weak coarse and medium subangular blocky structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine and fine interstitial pores and common very fine tubular pores; about 15 percent pebbles, 10 percent cobbles, and 20 percent stones; slightly acid (pH 6.5); clear smooth boundary.

B21—9 to 14 inches; dark yellowish brown (10YR 4/4) very stony loam, dark brown (10YR 3/3) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine and fine interstitial pores and common very fine tubular pores; about 25 percent pebbles, 10 percent cobbles, and 20 percent stones; slightly acid (pH 6.5); abrupt wavy boundary.

B22—14 to 24 inches; light yellowish brown (10YR 6/4) extremely stony loam, brown (10YR 4/3) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; many very fine and fine interstitial pores and common very fine tubular pores; about 25 percent pebbles, 20 percent cobbles, and 20 percent stones; slightly acid (pH 6.5); abrupt irregular boundary.

R—24 inches; fractured quartzite.

Depth to bedrock and thickness of the solum are 20 to 40 inches.

A horizon: Clay content is 10 to 15 percent. Rock fragment content is 35 to 45 percent.

B2 horizon: Texture is very stony loam and extremely stony loam. Clay content is 15 to 25 percent. Rock fragment content is 55 to 70 percent. Reaction is slightly acid or neutral.

Watercanyon Series

The Watercanyon series consists of very deep, well drained soils on foothills, mountainsides, and fan terraces. These soils formed in loess and in alluvium derived from loess. Slope is 4 to 60 percent. Elevation is 4,500 to 6,500 feet. Average annual precipitation is 12 to 16 inches, and average annual air temperature is 42 to 45 degrees F.

Typical pedon of a Watercanyon silt loam in an area of Ririe-Watercanyon complex, 12 to 20 percent slopes, about 2 miles northeast of Downey, about 660 feet east and 5 feet north of the southwest corner of sec. 25, T. 11 S., R. 37 E.

Ap—0 to 7 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak medium subangular blocky structure parting to weak very fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine interstitial pores; slightly effervescent; mildly alkaline (pH 7.8); abrupt smooth boundary.

B2—7 to 16 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak medium subangular blocky structure parting to weak very fine granular; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine interstitial pores; slightly effervescent; mildly alkaline (pH 7.8); clear smooth boundary.

C1ca—16 to 24 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots and few fine roots; many very fine and few fine tubular pores; strongly effervescent; moderately alkaline (pH 7.9); clear smooth boundary.

C2ca—24 to 41 inches; light gray (10YR 7/2) silt loam, pale brown (10YR 6/3) moist; massive; hard, firm, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; about 5 percent slightly hard cicada krotovinas; violently effervescent; moderately alkaline (pH 7.9); gradual smooth boundary.

C3ca—41 to 60 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; massive; few very fine roots; common very fine tubular pores; strongly effervescent; moderately alkaline (pH 8.3).

Secondary lime is at a depth of 15 to 20 inches. Clay content in the control section averages 8 to 18 percent.

B horizon: Reaction is mildly alkaline or moderately alkaline.

C horizon: Texture is silt loam or silt. Reaction is moderately alkaline or strongly alkaline.

Watercanyon Variant

The Watercanyon Variant consists of very deep, well drained soils on terrace breaks. These soils formed in silty sediment. Slope is 12 to 40 percent. Elevation is 4,600 to 5,000 feet. Average annual precipitation is 12 to 16 inches, and average annual air temperature is 42 to 45 degrees F.

Typical pedon of a Watercanyon Variant silt loam in an area of Wursten-Watercanyon Variant-Hondoho complex, 12 to 40 percent slopes, about 2.5 miles southwest of Virginia, about 1,210 feet west and 2,090 feet north of the southeast corner of sec. 11, T. 11 S., R. 36 E.

A1—0 to 4 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; moderate coarse and medium platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine and fine interstitial pores and common very fine and fine tubular pores; about 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

C1ca—4 to 11 inches; white (10YR 8/2) silt loam, very pale brown (10YR 7/3) moist; moderate medium platy structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; few very fine and fine tubular pores and few very fine interstitial pores; less than 5 percent pebbles; violently effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

C2ca—11 to 28 inches; very pale brown (10YR 7/3) silt loam, light yellowish brown (10YR 6/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few fine roots matted in vertical cracks; few very fine tubular and interstitial pores; about 5 percent pebbles; violently effervescent; moderately alkaline (pH 7.9); clear smooth boundary.

C3ca—28 to 38 inches; very pale brown (10YR 7/3) silt loam, very pale brown (10YR 7/4) moist; massive; hard, firm, slightly sticky and slightly plastic; few very fine and fine roots matted in vertical cracks; few very fine tubular and interstitial pores; about 5 percent pebbles; violently effervescent; mildly alkaline (pH 7.8); diffuse wavy boundary.

C4ca—38 to 61 inches; very pale brown (10YR 7/3) silt loam, light yellowish brown (10YR 6/4) moist; massive; hard, firm, slightly sticky and slightly plastic; few very fine and fine roots matted in vertical cracks; common very fine and fine tubular pores and few very fine interstitial pores; about 5 percent pebbles; violently effervescent; fine gypsum veins along vertical cracks; mildly alkaline (pH 7.7).

The control section is 0 to 5 percent rock fragments. Clay content in the control section averages 12 to 18 percent.

A horizon: Reaction is mildly alkaline or moderately alkaline. Calcium carbonate equivalent is 45 to 60 percent. Conductivity of the saturation extract is 4 to 8 millimhos per centimeter.

C horizon: Reaction is mildly alkaline or moderately alkaline. Calcium carbonate equivalent is 45 to 100 percent. Conductivity of the saturation extract is 16 to 30 millimhos per centimeter.

Wursten Series

The Wursten series consists of very deep, well drained soils on terraces. These soils formed in alluvium derived from mixed sources. Slope is 1 to 40 percent. Elevation is 4,600 to 5,000 feet. Average annual precipitation is 12 to 16 inches, and average annual air temperature is 42 to 46 degrees F.

Typical pedon of a Wursten gravelly silt loam in an area of Wursten-Watercanyon Variant-Hondoho complex, 12 to 40 percent slopes, about 1.5 miles northwest of Virginia, about 500 feet north and 150 feet east of the southwest corner of sec. 5, T. 10 S., R. 37 E.

A11—0 to 3 inches; grayish brown (10YR 5/2) gravelly silt loam, dark brown (10YR 3/3) moist; weak fine platy structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine interstitial pores and common very fine tubular pores; about 1 percent cobbles and 15 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

A12—3 to 9 inches; grayish brown (10YR 5/2) gravelly silt loam, dark brown (10YR 3/3) moist; weak medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots and common fine, medium, and coarse roots; many very fine tubular pores; about 15 percent pebbles and 5 percent cobbles; slightly effervescent; moderately alkaline (pH 7.9); abrupt smooth boundary.

C1ca—9 to 22 inches; light gray (10YR 7/2) gravelly loam, very pale brown (10YR 6/3) moist; weak medium and fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; many very fine tubular pores; about 5 percent cobbles and 30 percent pebbles; few thin lime coatings on the undersides of rock fragments and around pores; strongly effervescent; moderately alkaline (pH 7.9); abrupt smooth boundary.

C2ca—22 to 33 inches; very pale brown (10YR 7/3) gravelly loam, pale brown (10YR 6/3) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; many very fine tubular pores; about 5 percent cobbles and 25 percent pebbles; few thin lime coatings on the undersides of rock fragments and around pores; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

C3ca—33 to 39 inches; very pale brown (10YR 7/3) gravelly silt loam, brown (10YR 5/3) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few fine roots; many very fine tubular pores; about 5 percent cobbles and 15 percent pebbles; few thin lime coatings on the undersides of rock fragments and around pores; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

C4ca—39 to 60 inches; very pale brown (10YR 7/3) gravelly silt loam, light yellowish brown (10YR 4/3) moist; weak medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine tubular pores; about 5 percent cobbles and 15 percent pebbles; strongly effervescent; strongly alkaline (pH 9.0).

Secondary lime is at a depth of 8 to 18 inches. The control section is 15 to 35 percent rock fragments. Clay content in the control section averages 13 to 18 percent.

A horizon: Rock fragment content is 15 to 30 percent. Reaction is mildly alkaline or moderately alkaline.

C horizon: Texture is gravelly silt loam or gravelly loam. Rock fragment content is 20 to 35 percent. Reaction is moderately alkaline or strongly alkaline.

Yago Series

The Yago series consists of very deep, well drained soils on mountainsides and fan terraces. These soils formed in mixed alluvium and colluvium derived dominantly from sandstone and quartzite. Slope is 4 to 20 percent. Elevation is 5,600 to 7,000 feet. Average annual precipitation is 16 to 22 inches, and average annual air temperature is 40 to 44 degrees F.

Typical pedon of a Yago extremely stony silty clay loam in an area of Broadhead-Yago complex, 12 to 20 percent slopes, about 3 miles northeast of Lava Hot Springs, about 860 feet south and 900 feet west of the northeast corner of sec. 24, T. 9 S., R. 38 E.

A1—0 to 10 inches; dark grayish brown (10YR 4/2) extremely stony silty clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium and fine subangular blocky structure; hard, firm, sticky and plastic; common very fine, fine, and medium roots and few coarse roots; many very fine interstitial pores along the faces of peds and common very fine and fine tubular pores; about 10 percent pebbles, 30 percent cobbles, and 20 percent stones; slightly acid (pH 6.5); abrupt irregular boundary.

B21t—10 to 16 inches; brown (7.5YR 5/4) very stony clay loam, dark brown (7.5YR 4/4) moist; moderate medium and fine angular blocky structure; very hard, very firm, very sticky and very plastic; common very fine and fine roots; common very fine interstitial pores along the faces of peds and common very fine and fine tubular pores; few thin clay films on the faces of peds and in pores; about 10 percent pebbles, 30 percent cobbles, and 20 percent stones; slightly acid (pH 6.5); gradual irregular boundary.

B22t—16 to 37 inches; brown (7.5YR 5/4) very stony clay loam, dark brown (7.5YR 4/4) moist; moderate coarse and medium angular blocky structure; extremely hard, very firm, very sticky and very plastic; common very fine and few fine roots; common very fine interstitial pores along faces of peds and few very fine tubular pores; many moderately thick clay films on faces of peds and in pores; about 10 percent pebbles, 30 percent cobbles, and 20 percent stones; neutral (pH 6.7); abrupt irregular boundary.

B23tca—37 to 45 inches; light brown (7.5YR 6/4) very stony clay loam, brown (7.5YR 5/4) moist; moderate coarse and medium angular blocky structure; extremely hard, very firm, very sticky and very plastic; common very fine roots; common very fine interstitial pores along faces of peds and few very fine tubular pores; common moderately thick clay films on faces of peds and in pores; about 10 percent pebbles, 30 percent cobbles, and 20 percent stones; common thin coatings of calcium carbonate on faces of peds; neutral (pH 7.2); clear wavy boundary.

Cca—45 to 60 inches; reddish yellow (7.5YR 6/6) very stony silty clay loam, strong brown (7.5YR 5/6) moist; massive; slightly hard, friable, sticky and slightly plastic; few very fine and fine roots; few very fine tubular pores; about 10 percent pebbles, 30 percent cobbles, and 20 percent stones; many fine rounded iron and manganese concretions; strongly effervescent; mildly alkaline (pH 7.4).

Bedrock is at a depth of 60 inches or more. Lime is at a depth of 36 to 60 inches or more. Rock fragment content in the control section averages 40 to 60 percent. Clay content in the control section averages 35 to 50 percent.

A horizon: Clay content is 27 to 34 percent. Rock fragment content is 35 to 65 percent. Reaction is medium acid or slightly acid.

Bt horizon: Texture is very stony clay loam, very stony silty clay loam, or very stony clay. Clay content is 35 to 50 percent. Rock fragment content is 40 to 60 percent. Reaction is slightly acid or neutral.

Cca horizon: Texture is very stony silt loam or very stony silty clay loam. Clay content is 23 to 34 percent. Rock fragment content is 40 to 60 percent. Reaction is neutral or mildly alkaline.

Formation of the Soils

Soil is a natural, three-dimensional body on the surface of the Earth that supports or is capable of supporting plants. It is a mixture of minerals, organic matter, water, and air, all of which occur in varying proportions (*15*). Soils differ in their appearance, productivity, and management requirements in different areas and even within short distances. The characteristics and properties of a soil are determined by the interaction of the five soil forming factors. These five factors are parent material, climate, living organisms, relief, and time. The influence of any one of these factors varies from place to place, but the interaction of all of them determines the kind of soil that forms.

Parent Material

The soils in the survey area formed in residual, colluvial, alluvial, lacustrine, and eolian parent materials. These parent materials are derived from material ranging in age from the Precambrian Pocatello Formation to Recent alluvium (*8*). The Bonneville Flood of late Pleistocene time (*13*) also had tremendous influence on the parent materials and soil development in Marsh Valley and in the Portneuf River Valley, downstream from a point near McCammon.

The soils in the mountains and foothills developed in parent materials derived primarily from Precambrian and Paleozoic quartzite, sandstone, limestone, dolomite, and related sedimentary and metasedimentary rock. There is tremendous variability in the degree of development expressed in these soils, primarily because of the kinds of parent material they formed in and also because of the other soil forming factors. These soils formed mostly in alluvium and colluvium; the only residual soils are on relatively stable positions on the landscape. The soils that formed in parent material derived from quartzite and sandstone exhibit more soil development than those that formed in parent material derived from limestone and dolomite. This is primarily because the lime in these materials must be leached before the formation and translocation of clay can take place. The soils that formed in material derived from sandstone and quartzite have no lime and have a well developed, medium textured to fine textured subsoil. Valmar, Camelback, and Hades are examples of soils that have a medium textured or moderately fine textured subsoil. Beaverdam, Harkness, and Mikesell are examples of soils that have a fine textured subsoil. The soils that formed in material derived from limestone and dolomite are either calcareous to the surface or are leached to some degree and have horizons of lime accumulation. They generally have a very weakly developed subsoil. Cedarhill, Ridgecrest, Ireland, and Ricrest soils are typical of these soils.

A very small percentage of the soils in the survey area formed in parent material derived from volcanics, including ash, tuff, and andesite of the Starlight Formation of middle Pliocene age and the Portneuf Basalt of late Pleistocene age. The volcanic ash and tuff deposits are scattered throughout the survey area. It appears that these deposits may have been extensive below an elevation of about 6,000 feet and were probably several tens of feet thick. Most of the ash and tuff has been eroded away. The areas currently present were probably covered by loess and alluvium, and thus protected, but they are now being exhumed through erosion. Coalbank, Trailcreek, and Lonigan soils formed in volcanic ash and tuff. The andesite is located at the extreme north end of the Bannock Range, west of the city of Pocatello. The only soils directly related to the andesite are those of the Swanner series, which are on steep and very steep side slopes and on ridgetops. The rest of the andesite is covered with deep deposits of loess. The Portneuf Basalt was scoured by the catastrophic Bonneville Flood. Soils such as those of the McCarey, McCarey Variant, Portino, and Thornock series formed in silty alluvium deposited as the flood abated and in loess deposited after the flood. The only influence from the basalt is the rock fragments in the soil profile.

The exact origin of the Portneuf Basalt is not known, but it is hypothesized that it originated east of the survey area and flowed down the ancient channel of the Portneuf River (*12*). This basalt also entered the ancient channel of Marsh Creek at its confluence with the Portneuf River, near McCammon. This blocked Marsh Creek, causing the formation of shallow lakes in Marsh Valley. Most of the resulting lake sediment has been buried or eroded away by the Bonneville Flood. The medium textured, carbonatic Watercanyon Variant soils formed in remnants of this sediment.

The coalesced fan terraces that border Marsh Valley and the Portneuf River at Pocatello originally were graded to a base level higher than the present level. The base level has been lowered several times but most dramatically by the Bonneville Flood. This downcutting episode brought the base level to near its present level. Because of the lower base level, the fan terraces have been deeply dissected by the present-day drainageways.

Most of these fan terraces have been covered with loess. The origin of the loess is in question, but it probably is primarily from the Raft Formation on the Snake River Plain. Some of the loess in Marsh Valley may be derived from the pluvial lakes created by the Portneuf Basalt dam and from the flood plain of Marsh Creek. The medium textured Rexburg, Ririe, Lanoak, Watercanyon, and Pocatello soils formed in these loess deposits. Soils such as those of the Broadhead, Manila, and Yago series formed in areas of fan terraces that received a very thin layer of loess or none at all.

During Pleistocene time, Lake Bonneville covered the extreme southern part of the survey area. The fine textured Oxford and Banida soils formed in the lake sediment. Lake Bonneville overtopped at Red Rock Pass, south of Downey, creating a catastrophic flood that poured down Marsh Valley into the Portneuf River and finally into ancient American Falls Lake, which was on the Snake River, near Pocatello. A huge delta was formed where the floodwater entered ancient American Falls Lake. This deltaic material, called the Michaud Gravels, ranges from sand particles to boulders 8 feet in diameter or more. As the floodwater abated, finer textured material was deposited on the Michaud Gravels. Bahem, Broxon, and Broncho soils formed in this flood-deposited material. Farther upstream the floodwater scoured and cut channels through the Portneuf Basalt. It also reworked and redeposited sand and gravel in the Downey, Virginia, and Arimo areas and laid a thin layer of silty alluvium over the sand and gravel. The Downey and Arimo soils formed in this material.

The majority of the recent alluvium is silty and is derived from the loess-covered uplands. Joevar, Inkom, Downata, and Bear Lake soils formed in this silty alluvium. Tendoy soils formed in organic material deposited in areas gouged out by the Bonneville Flood and formerly occupied by ponds and lakes.

Climate

Climate has had a strong influence on soil formation in the survey area. Temperature and precipitation affect the weathering of rock; the decomposition of minerals; the processes of leaching, illuviation, and eluviation; the kinds and amount of vegetation; and the accumulation and decomposition of organic matter.

The climate in the survey area generally is characterized by warm, dry summers and cold, moist winters. Temperature and precipitation are strongly influenced by the topography of the area. Generally, average annual precipitation increases and average annual temperature decreases as elevation increases. The warmest and driest part of the survey area is at the lowest elevation, which is in the northwestern corner, north of Pocatello. This part receives about 10 inches of precipitation annually and has an average annual temperature of about 47 degrees F. The greatest amount of precipitation and the coldest temperatures occur in the mountains in the east-central part of the survey area. This part receives about 25 to 35 inches of precipitation annually and has an average annual temperature of about 36 to 41 degrees.

The soils in the driest and warmest parts of the survey area have a light-colored surface layer. These soils also have calcium carbonate in the surface layer because there is not enough water moving through the soils to leach the calcium carbonate. Vegetation is somewhat sparse because of the limited precipitation. Examples of these soils are those of the Bahem, Broxon, and Pocatello series.

In areas that receive about 13 to 16 inches of precipitation, the calcium carbonate has been leached from the surface layer. With the increase in precipitation, vegetation, especially grasses, is more abundant. The grasses produce very extensive fibrous root systems. Large amounts of organic matter are incorporated into the soils from the annual dieback of the roots; therefore, the soils have a dark-colored surface layer. Examples of these soils are those of the Ririe, Rexburg, and Arimo series.

At higher elevations, precipitation is about 16 to 20 inches and the average annual temperatures are cooler. The rate of evapotranspiration is lower in these areas; thus, more water is available for soil forming processes. Calcium carbonate has been leached to a depth of 40 inches or more in the soils. The additional water aids in the decomposition of minerals to form clay and in the translocation of this clay. The vegetation on these soils is quite lush and is dominated by grasses. Organic matter has built up in the soils because the cool temperatures slow the microbial breakdown of organic matter. Camelback, Hades, and Broadhead soils have a deep, dark-colored surface layer and an accumulation of clay in the subsoil.

Soils in the coolest and wettest parts of the survey area support native vegetation dominated by an overstory of conifers and a very sparse understory. This kind of vegetation does not produce the thick, fibrous root system that grasses do, so large amounts of organic matter are not incorporated into the soils. Tree litter falls on the top of the soils and is not directly incorporated into them. Because of the cool temperatures, microbial activity that aids in the decomposition of the tree litter is retarded. The soils in these parts of the area are leached of calcium carbonate and have an accumulation of clay in the subsoil. The Harkness and Mikesell soils are examples. The surface layer of these soils is low in organic matter content, and the subsoil is fine textured.

Living Organisms

Plant and animal life is an important factor in the process of soil formation. The kinds and amount of vegetation have had a strong influence on the development of the soils in the survey area.

The poorly drained and very poorly drained soils on the flood plains developed under water-tolerant grasses, sedges, and forbs. Organic soils have developed in areas that have a permanent high water table because the growth of aerobic micro-organisms is inhibited. Tendoy muck is an example. Soils such as those in the Downata, Bear Lake, and Inkom series have developed in areas where the water table drops sufficiently in summer to allow organic matter to decompose. The dark color of the surface layer of these soils indicates that a large amount of organic matter is decomposing and is being incorporated into the soil.

The kind and amount of vegetation on the well drained soils are directly related to the amount of effective moisture received. The vegetation in the areas that receive less precipitation is mainly shrubs and grasses. In the areas that receive the most precipitation, the vegetation is mainly an overstory of coniferous trees and a very sparse understory of grasses and forbs.

On the lower terraces and foothills at the north end of the survey area, precipitation is about 10 to 12 inches. Vegetation is sparse in these areas, and the annual additions of organic matter are relatively small. Soils such as those in the Bahem, Broxon, and Pocatello series developed in these areas. They have a light-colored surface layer.

The soils at the intermediate elevations in the survey area formed under shrubs and grasses. In these areas, however, precipitation is higher and the amount of vegetation, especially grasses, is much greater. The abundance of fibrous roots has added much humus to the soils, and a dark-colored surface layer has formed in them. Micro-organisms and earthworms are very active in these soils. Soils such as those in the Bancroft, Rexburg, Ririe, and Lanoak series formed in these areas.

At the higher elevations, effective moisture is highest. The soils in these areas formed under an overstory of conifers and a sparse understory of mainly grasses and forbs. Since this type of plant community does not produce an abundant fibrous root system, the majority of the organic material comes from needles, leaves, and twigs. Because of the colder temperatures, which retard microbial activity, the organic material does not decompose as rapidly as at lower elevations. The soils in these areas generally have a layer of organic litter over a very thin, dark-colored surface layer, such as that of the Harkness soils, or a light-colored surface layer, such as that of the Mikesell soils.

Relief

The relief of the survey area has been determined mainly by its past geologic activity. Relief influences the formation of soils by its effect on natural soil drainage, erosion, air drainage, precipitation or effective moisture received, and exposure to the sun and wind. The survey area is characterized by steep mountainsides, gently rolling to steep foothills, deeply dissected fan terraces, flood plains, and terraces.

The soils of the mountains and foothills dramatically exhibit the effects of relief on soil development. These soils are steep and well drained. The soils on convex, south- and west-facing ridges and summits are subject to geologic erosion, and they receive less moisture because the wind blows the snow off. Because these areas receive more direct sunlight, the soil temperature is warmer and the soils dry out faster. These soils are generally moderately deep and have a relatively thin surface layer. Examples of these moderately deep, steep soils are those of the Ireland, Ridgecrest, and Valmar series. These soils have a high percentage of rock fragments.

Soils in concave positions and on foot slopes generally receive moisture from runoff and snow drifting from convex areas. Because of the extra moisture received, these soils produce more vegetation, which in turn reduces erosion. The deep and very deep Camelback, Hades, and Ricrest soils are examples of soils in these areas. These soils have a thick, dark-colored surface layer.

Soils at higher elevations on north- and east-facing side slopes receive less direct sunlight and have colder soil temperatures, and they receive more precipitation and retain moisture longer. Soils in the Harkness, Mikesell, and Beaverdam series are examples. These soils have a strongly developed, fine textured subsoil.

Soils on loess-covered fan terraces are very deep and well drained. The Watercanyon soils are on south- and west-facing side slopes of fan terraces. Because the snow blows off these soils, they receive less precipitation than do soils such as the Ririe and Rexburg soils that are in more nearly plane areas. The Watercanyon soils also receive more direct sunlight, dry out quicker, and are subject to a greater hazard of erosion. They exhibit very little soil development; whereas the Ririe and Rexburg soils have a dark-colored surface layer. The Lanoak soils are on north- and east-facing side slopes. They receive additional moisture from drifting snow, have cooler soil temperatures, and retain moisture longer. These soils have a very thick, dark-colored surface layer because of the increased organic matter produced by the more luxuriant vegetation.

The soils on terraces and flood plains are nearly level to gently sloping. Those on the higher terraces have better drainage than do those on the lower terraces and flood plains. The Arimo, Bahem, Broxon, Downey, and

Joevar soils are on the higher terraces and are well drained. Because of the nearly level topography of the lower terraces and flood plains and the shallow natural stream channels, drainage is poor in these areas. The soils in these areas have a high or fluctuating water table. The Inkom, Downata, and Bear Lake soils formed on flood plains and low terraces. These soils are gleyed and mottled because of poor drainage.

Time

The soils in the survey area vary considerably in age. The length of time the parent material has been subjected to the effects of climate and living organisms and modified by relief is important in the formation of soils. The relative age of soils is expressed in the differentiation and degree of expression of horizons within each soil.

In general, soils on the flood plains and low terraces are young. The Downata, Inkom, and Joevar soils formed in Recent alluvium. They have accumulated organic matter only in the surface layer and have developed a weak B2 horizon.

Soils on the terraces formed by the Bonneville Flood and on the loess-covered fan terraces appear to be nearly the same age. The soils on these positions that receive more precipitation have accumulated organic matter in the surface layer and have developed a B2 horizon. Lime has been leached downward in these soils. The Rexburg, Arimo, Hondoho, Arbone, and Lanoak soils are examples. The soils in the drier areas have accumulated less organic matter and are leached of lime to a lesser depth. These soils are calcareous to the surface, but they exhibit some translocation of lime. The Pocatello, Bahem, and Broxon soils are examples.

Soils on the higher fan terraces and mountain foot slopes that are not covered with loess are old enough for the total amount of clay to increase through weathering and to accumulate in the subsoil. The Yago, Manila, and Broadhead soils are on these positions. They have a well developed, fine textured B2t horizon.

Soils on the mountains and foothills differ greatly in degree of development. Young soils such as those of the Cedarhill and Ridgecrest series have steep slopes and south or west aspects. Since the natural vegetation tends to be somewhat sparse and the slopes steep, these soils have lost soil material by erosion. They are moderately deep to very deep but have only a thin A horizon and are calcareous to the surface. The Camelback and Valmar soils have more plant cover and thus are better protected from erosion. These soils have a much greater accumulation of organic matter in the surface layer and have some accumulation of clay in the subsoil. Soils such as those in the Toponce, Beaverdam, Harkness, and Mikesell series have been developing long enough for the total amount of clay to increase through weathering and to accumulate in the subsoil, forming a very well developed, fine textured B2t horizon.

On the basis of the relative age of the volcanic ash and tuff, the soils that formed in this material should exhibit much more development than they actually do. The Trailcreek, Coalbank, and Lonigan soils have an accumulation of organic matter in the A horizon only and have a very weakly developed B horizon. There are two possible explanations for this lack of soil development. The first is that after the parent material was deposited, it was buried by loess and alluvium. Volcanic ash and tuff have been found in several areas beneath an overburden of loess and alluvium. Through geologic and accelerated erosion it is now being exhumed and hence has been exposed to the soil forming processes for a relatively short period of time. The other explanation is that since this volcanic material is extremely erodible, these soils have lost soil material through erosion nearly as fast as soil development has taken place. It appears to be a combination of these two situations that has determined the degree of soil development that has taken place in the volcanic ash and tuff parent materials.

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Glossary

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Animal-unit-month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as—

Low	0 to 3.75
Moderate	3.75 to 7.5
High	More than 7.5

Back slope. The geomorphic component that forms the steepest inclined surface and principal element of many hillsides. Back slopes in profile are commonly steep, are linear, and may or may not include cliff segments.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks. The steep to very steep broken land at the border of an upland summit that is dissected by ravines.

Breast height. An average height of 4 1/2 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management. Use of mechanical, chemical, or biological methods to reduce or eliminate competition of woody vegetation to allow understory grasses and forbs to recover, or to make conditions favorable for reseeding. It increases production of forage, which reduces erosion. Brush management may improve the habitat for some species of wildlife.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Canopy. The leafy crown of trees or shrubs. (See crown.)

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Chiseling. Tillage with an implement having one or more soil-penetrating points that loosen the subsoil and bring clods to the surface. A form of emergency tillage to control soil blowing.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Coarse fragments. Mineral or rock particles larger than 2 millimeters in diameter.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that is 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.5 to 25 centimeters) in diameter. Very cobbly soil material is 35 to 60 percent of these rock fragments, and extremely cobbly soil material is more than 60 percent.

Colluvium. Soil material, rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning or constructing terraces, diversions, and other water-control measures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Compressible (in tables). Excessive decrease in volume of soft soil under load.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

Conglomerate. A coarse grained, clastic rock composed of rounded to subangular rock fragments more than 2 millimeter in diameter. It commonly has a matrix of sand and finer material. Conglomerate is the consolidated equivalent of gravel.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—Readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky.—Adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard; little affected by moistening.

Contour stripcropping (or contour farming). Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosive. High risk of corrosion to uncoated steel or deterioration of concrete.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropping system. Growing crops using a planned system of rotation and management practices.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or arresting grazing for a prescribed period.

Depth to rock (in tables). Bedrock is too near the surface for the specified use.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:

Excessively drained.—These soils have very high and high hydraulic conductivity and low water holding capacity. They are not suited to crop production unless irrigated.

Somewhat excessively drained.—These soils have high hydraulic conductivity and low water holding capacity. Without irrigation, only a narrow range of crops can be grown and yields are low.

Well drained.—These soils have intermediate water holding capacity. They retain optimum amounts of moisture, but they are not wet close enough to the surface or long enough during the growing season to adversely affect yields.

Moderately well drained.—These soils are wet close enough to the surface or long enough that planting or harvesting operations or yields of some field crops are adversely affected unless artificial drainage is provided. Moderately well drained soils commonly have a layer with low hydraulic conductivity, a wet layer relatively high in the profile, additions of water by seepage, or some combination of these.

Somewhat poorly drained.—These soils are wet close enough to the surface or long enough that planting or harvesting operations or crop growth is markedly restricted unless artificial drainage is provided. Somewhat poorly drained soils commonly have a layer with low hydraulic conductivity, a wet layer high in the profile, additions of water through seepage, or a combination of these.

Poorly drained.—These soils commonly are so wet at or near the surface during a considerable part of the year that field crops cannot be grown under natural conditions. Poorly drained conditions are caused by a saturated zone, a layer with low hydraulic conductivity, seepage, or a combination of these.

Very poorly drained.—These soils are wet to the surface most of the time. They are wet enough to prevent the growth of important crops (except rice) unless artificially drained.

Drainage, surface. Runoff, or surface flow of water, from an area.

Duff. A term used to identify a generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of the activities of man or other animals or of a catastrophe in nature; for example, fire that exposes the surface.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and produced by erosion or faulting. Synonym: scarp.

Excess alkali (in tables). Excess exchangeable sodium in the soil. The resulting poor physical properties restrict the growth of plants.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

Excess lime (in tables). Excess carbonates in the soil that restrict the growth of some plants.

Excess salts (in tables). Excess water-soluble salts in the soil that restrict the growth of most plants.

Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) emplaced on the earth's surface.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fan terrace. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

Fast intake (in tables). The rapid movement of water into the soil.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Fine textured soil. Sandy clay, silty clay, and clay.

Flaggy soil material. Material that is, by volume, 15 to 35 percent flagstones. Very flaggy soil material is 35 to 60 percent flagstones, and extremely flaggy soil material is more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Foothill. A steeply sloping upland that has relief of as much as 1,000 feet (or 300 meters) and fringes a mountain range or high-plateau escarpment.

Foot slope. The inclined surface at the base of a hill.

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors and mottles.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock up to 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that is 15 to 50 percent, by volume, rounded or angular rock fragments, not prominently flattened, up to 3 inches (7.6 centimeters) in diameter.

Ground water (geology). Water filling all the unblocked pores of underlying material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well-defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an upper case letter represents the major horizons. Numbers or lower case letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the *Soil Survey Manual*. The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, cost of which was originally part of a B horizon.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, alluminum, or some combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, the number 2 precedes the letter C.

R layer.—Consolidated rock beneath the soil. The rock commonly underlies a C horizon, but can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are—

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Lacustrine deposit (geology). Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Large stones (in tables). Rock fragments 3 inches (7.5 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Light textured soil. Sand and loamy sand.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low strength. The soil is not strong enough to support loads.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, and fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, and silty clay loam.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few, common,* and *many*; size—*fine, medium,* and *coarse*; and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Mountain. A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides and considerable bare-rock surface. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

Muck. Dark colored, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Munsell notation. A designation of color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color of 10YR hue, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

Organic matter. Plant and animal residue in the soil in various stages of decomposition.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affecting the specified use.

Permeability. The quality of the soil that enables water to move downward through the profile. Permeability is measured as the number of inches per hour that water moves downward through the saturated soil. Terms describing permeability are:

Very slow	less than 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management. For example, slope, stoniness, and thickness.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. The water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid permeability or an impermeable layer near the surface, the soil may not adequately filter effluent from a waste disposal system.

Poor outlets (in tables). Refers to areas where surface or subsurface drainage outlets are difficult or expensive to install.

Potential native plant community. The plant community on a given site that will be established if present environmental conditions continue to prevail and the site is properly managed. (See climax plant community.)

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This increases the vigor and reproduction of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Range condition. The present composition of the plant community on a range site in relation to the potential natural plant community for that site. Range condition is expressed as excellent, good, fair, or poor on the basis of how much the present plant community has departed from the potential.

Range site. An area of rangeland where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. A range site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other range sites in kind or proportion of species or total production.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degree of acidity or alkalinity is expressed as—

	pH
Extremely acid	Below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered, or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep sided channel resulting from accelerated erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery.

Rippable. Bedrock or hardpan can be excavated using a single-tooth ripping attachment mounted on a tractor with a 200-300 draw bar horsepower rating.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-size particles.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saprolite (soil science). Unconsolidated residual material underlying the soil and grading to hard bedrock below.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. there are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and runoff water.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Site class. A grouping of site indexes into 5 to 7 production capability levels. Each level can be represented by a site curve.

Site curve (50-year). A set of related curves on a graph that shows the average height of dominant trees for the range of ages on soils that differ in productivity. each level is represented by a curve. The basis of the curves is the height of dominant trees that are 50 years old or are 50 years old at breast height.

Site curve (100-year). A set of related curves on a graph that show the average height of dominant and codominant trees for a range of ages on soils that differ in productivity. Each level is represented by a curve. The basis of the curves is the height of dominant and codominant trees that are 100 years old or are 100 years old at breast height.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75 feet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in a hundred feet of horizontal distance. In this survey the following slope classes are recognized:

	Percent
Nearly level	0 to 2
Gently sloping	2 to 5
Strongly sloping	5 to 15
Moderately steep	15 to 25
Steep	25 to 50
Very steep	50 and higher

Slope (in tables). Slope is great enough that special practices are required to insure satisfactory performance of the soil for a specific use.

Slow intake (in tables). The slow movement of water into the soil.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.5 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 mm in equivalent diameter and ranging between specified size limits. The names and sizes of separates recognized in the United States are as follows:

	Millimeters
Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05

Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 6 to 15 inches (15 to 38 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the E horizon. generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Talus. Rock fragments of any size or shape, commonly coarse and angular, derived from and lying at the base of a cliff or very steep, rock slope. The accumulated mass of such loose, broken rock formed chiefly by falling, rolling, or sliding.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field is generally built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toe slope. The outermost inclined surface at the base of a hill; part of a foot slope.

Too arid (in tables). The soil is dry most of the time, and vegetation is difficult to establish.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Tuff. A compacted deposit that is 50 percent or more volcanic ash and dust.

Unstable fill (in tables). Risk of caving or sloughing on banks of fill material.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial melt water. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Variant, soil. A soil having properties sufficiently different from those of other known soils to justify a new series name, but occurring in such a limited geographic area that creation of a new series is not justified.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Windthrow. The action of uprooting and tipping over trees by the wind.

Tables

TABLE 1.--TEMPERATURE AND PRECIPITATION

[Recorded in the period 1962-79 at Arbon, Idaho]

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	30.8	14.5	22.7	49	-19	0	1.72	0.84	2.48	8	16.7
February---	36.8	19.3	28.1	51	-10	14	1.32	0.53	1.98	5	15.9
March------	43.3	22.6	33.0	67	-5	40	1.28	0.68	1.80	5	6.4
April------	54.2	29.3	41.8	75	12	122	1.34	0.47	2.05	5	3.9
May--------	66.9	36.2	51.6	85	18	360	1.24	0.55	1.83	5	0.6
June-------	75.8	43.5	59.7	94	29	591	1.78	0.87	2.56	5	0.0
July-------	86.7	49.4	68.1	97	34	871	0.84	0.18	1.36	2	0.0
August-----	84.5	47.8	66.2	97	30	812	0.84	0.19	1.33	3	0.0
September--	75.0	39.4	57.2	91	21	516	0.90	0.15	1.46	3	0.1
October----	62.5	30.7	46.6	80	10	228	1.08	0.30	1.71	4	1.9
November---	43.9	23.5	33.7	64	-4	16	1.48	0.56	2.24	5	8.8
December---	32.8	15.5	24.2	48	-15	6	1.80	0.48	2.86	5	14.4
Yearly:											
Average--	57.8	31.0	44.4	---	---	---	---	---	---	---	---
Extreme--	---	---	---	98	-24	---	---	---	---	---	---
Total----	---	---	---	---	---	3,576	15.62	12.41	18.62	55	68.7

*A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principle crops in the area (40° F).

TABLE 2.--FREEZE DATES IN SPRING AND FALL

[Recorded in the period 1962-79
at Arbon, Idaho]

Probability	Temperature		
	24° F or lower	28° F or lower	32° F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	May 27	June 8	June 29
2 years in 10 later than--	May 20	June 1	June 22
5 years in 10 later than--	May 6	May 19	June 7
First freezing temperature in fall:			
1 year in 10 earlier than--	September 17	September 4	August 6
2 years in 10 earlier than--	September 23	September 9	August 16
5 years in 10 earlier than--	Ocotber 5	September 20	September 4

TABLE 3.--GROWING SEASON

[Recorded in the period 1962-79
at Arbon, Idaho]

Probability	Length of growing season if daily minimum temperature exceeds--		
	24° F	28° F	32° F
	Days	Days	Days
9 years in 10	127	93	43
8 years in 10	135	103	58
5 years in 10	152	123	87
2 years in 10	170	145	119
1 year in 10	183	159	140

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Bannock County	Power County	Total-- Area	Total-- Extent
		Acres	Acres	Acres	Pct
1	Arbone silt loam, 1 to 4 percent slopes	2,416	0	2,416	0.5
2	Arbone silt loam, 4 to 12 percent slopes	1,715	0	1,715	0.3
3	Arbone-Hondoho complex, 12 to 20 percent slopes	2,402	0	2,402	0.5
4	Arbone-McCarey-Lava flows complex, 4 to 12 percent slopes	840	0	840	0.2
5	Arbone-Rubble land complex, 2 to 8 percent slopes	290	0	290	0.1
6	Arimo silt loam, 0 to 3 percent slopes	2,188	0	2,188	0.4
7	Bahem silt loam, 0 to 2 percent slopes	4,351	0	4,351	0.9
8	Bahem silt loam, 2 to 4 percent slopes	709	0	709	0.1
9	Bancroft silt loam, 4 to 12 percent slopes	4,362	0	4,362	0.9
10	Bancroft silt loam, 12 to 20 percent slopes	1,776	0	1,776	0.4
11	Bancroft-Manila complex, 15 to 30 percent slopes	1,535	0	1,535	0.3
12	Banida silty clay loam, 0 to 2 percent slopes	253	0	253	0.1
13	Bear Lake-Bear Lake Variant complex, drained, 0 to 1 percent slopes	649	0	649	0.1
14	Broadhead-Hades-Yago complex, 4 to 20 percent slopes	1,332	0	1,332	0.3
15	Broadhead-Yago complex, 4 to 12 percent slopes	2,085	0	2,085	0.4
16	Broadhead-Yago complex, 12 to 20 percent slopes	1,330	0	1,330	0.3
17	Broncho cobbly loam, 1 to 8 percent slopes	642	0	642	0.1
18	Broncho extremely stony loam, 4 to 20 percent slopes	673	100	773	0.2
19	Broncho Variant-Pocatello complex, 20 to 50 percent slopes	1,418	0	1,418	0.3
20	Broncho Variant-Ririe-Pocatello complex, 20 to 50 percent slopes	665	0	665	0.1
21	Broxon silt loam, 0 to 2 percent slopes	1,893	347	2,240	0.4
22	Broxon silt loam, 2 to 4 percent slopes	1,358	0	1,358	0.3
23	Camelback-Cedarhill, high precipitation-Lanoak complex, 20 to 50 percent slopes	14,948	0	14,948	3.0
24	Camelback-Greys complex, 20 to 30 percent slopes	1,447	0	1,447	0.3
25	Camelback-Hades complex, 6 to 20 percent slopes	5,379	0	5,379	1.1
26	Camelback-Valmar-Hades complex, 20 to 30 percent slopes	1,332	0	1,332	0.3
27	Camelback Variant-Valmar Variant complex, 20 to 60 percent slopes	1,805	0	1,805	0.4
28	Cedarhill very cobbly silt loam, 30 to 60 percent slopes	3,589	0	3,589	0.7
29	Cedarhill-Ireland-Rock outcrop complex, 30 to 60 percent slopes	6,682	0	6,682	1.3
30	Cedarhill-Ririe-Watercanyon complex, 30 to 60 percent slopes	28,100	1,055	29,155	5.8
31	Cedarhill-Rock outcrop complex, 30 to 60 percent slopes	5,380	0	5,380	1.1
32	Cedarhill, high precipitation-Camelback-Moonlight complex, 20 to 50 percent slopes	5,825	0	5,825	1.2
33	Cedarhill, high precipitation-Hades-Ricrest complex, 20 to 50 percent slopes	9,869	0	9,869	2.0
34	Cedarhill, high precipitation-Hondoho-Arbone complex, 20 to 50 percent slopes	2,480	0	2,480	0.5
35	Cedarhill, high precipitation-Hondoho-Ridgecrest complex, 20 to 50 percent slopes	5,236	0	5,236	1.0
36	Cedarhill, high precipitation-Manila complex, 30 to 50 percent slopes	579	0	579	0.1
37	Cedarhill, high precipitation-Trailcreek-Coalbank complex, 20 to 50 percent slopes	4,630	0	4,630	0.9
38	Coalbank very fine sandy loam, 4 to 12 percent slopes	565	0	565	0.1
39	Coalbank-Trailcreek-Lonigan complex, 12 to 20 percent slopes	1,491	0	1,491	0.3
40	Coalbank-Trailcreek-Lonigan complex, 20 to 50 percent slopes	2,123	0	2,123	0.4
41	Downata-Bear Lake complex, drained, 0 to 1 percent slopes	6,169	0	6,169	1.2
42	Downey-Arimo complex, 0 to 3 percent slopes	9,328	0	9,328	1.8
43	Downey-Arimo complex, 3 to 8 percent slopes	5,104	0	5,104	1.0
44	Enochville-Enochville Variant complex, 0 to 1 percent slopes	621	0	621	0.1
45	Greys-Pavohroo-Sedgway association, 8 to 20 percent slopes	1,137	0	1,137	0.2
46	Hades gravelly silt loam, 6 to 15 percent slopes	863	0	863	0.2
47	Hades-Camelback-Hondoho complex, 30 to 60 percent slopes	4,761	0	4,761	0.9
48	Hades-Holmes complex, 1 to 10 percent slopes	1,533	0	1,533	0.3
49	Hades-Lanoak complex, 4 to 12 percent slopes	1,220	0	1,220	0.2
50	Hades-Lanoak-Camelback complex, 20 to 50 percent slopes	8,938	0	8,938	1.8
51	Harkness-Sedgway-Mikesell complex, 20 to 50 percent slopes	14,776	0	14,776	2.9

See footnote at end of table.

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Bannock County	Power County	Total--	
				Area	Extent
		Acres	Acres	Acres	Pct
52	Holmes gravelly loam, 1 to 4 percent slopes	1,725	0	1,725	0.3
53	Hondoho-Arbone complex, 4 to 12 percent slopes	6,559	30	6,589	1.3
54	Hondoho-Arbone-Ririe complex, 20 to 50 percent slopes	8,707	0	8,707	1.7
55	Hondoho-Hades complex, 4 to 12 percent slopes	630	0	630	0.1
56	Hondoho-Lanoak-Camelback complex, 20 to 50 percent slopes	4,840	0	4,840	1.0
57	Inkom silt loam, 0 to 1 percent slopes	883	0	883	0.2
58	Inkom silt loam, drained, 0 to 1 percent slopes	4,905	0	4,905	1.0
59	Ireland-Camelback-Rock outcrop complex, 30 to 60 percent slopes	14,357	0	14,357	2.8
60	Ireland-Dateman-Pavohroo association, 20 to 60 percent slopes	12,451	0	12,451	2.5
61	Ireland-Hades-Cedarhill complex, 20 to 60 percent slopes	997	0	997	0.2
62	Joes silt loam, 1 to 4 percent slopes	643	0	643	0.1
63	Joes silt loam, 4 to 12 percent slopes	3,135	0	3,135	0.6
64	Joevar silt loam, 0 to 3 percent slopes	3,650	0	3,650	0.7
65	Lanoak silt loam, 1 to 4 percent slopes	237	0	237	*
66	Lanoak silt loam, 4 to 12 percent slopes	3,549	0	3,549	0.7
67	Lanoak silt loam, 12 to 20 percent slopes	5,230	0	5,230	1.0
68	Lanoak silt loam, 20 to 30 percent slopes	1,840	0	1,840	0.4
69	Lanoak-Camelback complex, 20 to 50 percent slopes	4,434	0	4,434	0.9
70	Lanoak-Greys association, 4 to 12 percent slopes	2,090	0	2,090	0.4
71	Lanoak-Greys association, 12 to 20 percent slopes	1,027	0	1,027	0.2
72	Lanoak-Hades complex, 6 to 20 percent slopes	4,592	0	4,592	0.9
73	Lanoak-Watercanyon-Rexburg complex, 12 to 20 percent slopes	4,045	0	4,045	0.8
74	Lava flows-McCarey-McCarey Variant complex, 1 to 8 percent slopes	7,162	0	7,162	1.4
75	Manila-Bancroft complex, 6 to 15 percent slopes	1,749	0	1,749	0.3
76	Manila-Cedarhill, high precipitation complex, 20 to 30 percent slopes	667	0	667	0.1
77	McDole-McDole Variant complex, 0 to 2 percent slopes	1,962	45	2,007	0.4
78	Moonlight silt loam, 30 to 60 percent slopes	1,201	0	1,201	0.2
79	Moonlight-Camelback association, 30 to 60 percent slopes	10,132	125	10,257	2.0
80	Moonlight-Pavohroo complex, 30 to 60 percent slopes	2,664	0	2,664	0.5
81	Oxford silty clay loam, 4 to 12 percent slopes	635	0	635	0.1
82	Oxford-Banida complex, 2 to 4 percent slopes	446	0	446	0.1
83	Pavohroo-Moonlight complex, 30 to 60 percent slopes	4,833	0	4,833	1.0
84	Pavohroo-Sedgway-Toponce complex, 20 to 50 percent slopes	5,455	0	5,455	1.1
85	Pits, gravel	818	50	868	0.2
86	Pits, quarry	64	45	109	*
87	Pocatello silt loam, 1 to 4 percent slopes	2,400	0	2,400	0.5
88	Pocatello silt loam, 4 to 8 percent slopes	3,386	50	3,436	0.7
89	Pocatello silt loam, 8 to 12 percent slopes	2,542	155	2,697	0.5
90	Pocatello silt loam, 12 to 20 percent slopes	1,901	235	2,136	0.4
91	Pocatello silt loam, 20 to 30 percent slopes	737	30	767	0.2
92	Portino-Thornock complex, 0 to 2 percent slopes	800	0	800	0.2
93	Rexburg silt loam, 1 to 4 percent slopes	5,736	0	5,736	1.1
94	Rexburg silt loam, 4 to 12 percent slopes	16,239	0	16,239	3.2
95	Rexburg silt loam, 12 to 20 percent slopes	3,857	0	3,857	0.8
96	Rexburg silt loam, 20 to 40 percent slopes	555	0	555	0.1
97	Ririe silt loam, 1 to 4 percent slopes	8,055	0	8,055	1.6
98	Ririe silt loam, 4 to 12 percent slopes	13,798	250	14,048	2.8
99	Ririe silt loam, 12 to 20 percent slopes	1,159	0	1,159	0.2
100	Ririe-Watercanyon complex, 4 to 12 percent slopes	11,637	0	11,637	2.3
101	Ririe-Watercanyon complex, 12 to 20 percent slopes	22,186	0	22,186	4.4
102	Ririe-Watercanyon complex, 20 to 30 percent slopes	1,292	0	1,292	0.3
103	Ririe-Watercanyon-Cedarhill complex, 12 to 30 percent slopes	8,116	0	8,116	1.6
104	Rock outcrop	620	0	620	0.1
105	Rubble land-Haploxerolls complex, steep	1,093	0	1,093	0.2
106	Scout Variant-Camelback Variant association, 30 to 60 percent slopes	3,330	0	3,330	0.7
107	Sedgway-Beaverdam complex, 30 to 60 percent slopes	10,284	0	10,284	2.0
108	Slickens	0	261	261	0.1
109	Swanner-Hondoho complex, 12 to 20 percent slopes	142	362	504	0.1
110	Swanner-Rock outcrop complex, 50 to 80 percent slopes	112	350	462	0.1

See footnote at end of table.

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Bannock County	Power County	Total-- Area	Total-- Extent
		Acres	Acres	Acres	Pct
111	Tendoy muck, drained, 0 to 1 percent slopes	1,337	0	1,337	0.3
112	Toponce-Broadhead association, 6 to 30 percent slopes	2,237	0	2,237	0.4
113	Urban land-Bahem-Broxon complex, 0 to 3 percent slopes	4,983	0	4,983	1.0
114	Urban land-Bahem-Broxon complex, 3 to 6 percent slopes	723	0	723	0.1
115	Valmar very cobbly silt loam, low precipitation, 40 to 80 percent slopes	2,578	0	2,578	0.5
116	Valmar-Camelback-Hades complex, 30 to 60 percent slopes	29,580	130	29,710	5.8
117	Valmar-Hades complex, 20 to 50 percent slopes	268	0	268	0.1
118	Valmar, cool-Rock outcrop complex, 20 to 60 percent slopes	2,551	0	2,551	0.5
119	Valmar, low precipitation-Watercanyon-Hondoho complex, 20 to 50 percent slopes	7,833	615	8,448	1.7
120	Watercanyon silt loam, 12 to 20 percent slopes	438	0	438	0.1
121	Watercanyon-Swanner-Rock outcrop complex, 20 to 50 percent slopes	1,788	85	1,873	0.4
122	Wursten gravelly silt loam, 1 to 4 percent slopes	1,111	0	1,111	0.2
123	Wursten-Watercanyon Variant-Hondoho complex, 12 to 40 percent slopes	5,506	0	5,506	1.1
	Water	274	0	274	0.1
	Total	500,290	4,320	504,610	100.0

* Less than 0.1 percent.

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE

[Yields in the N columns are for nonirrigated soils; those in the I columns are for irrigated soils. Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil. Only the soils suited to crops and pasture are listed]

Soil name and map symbol	Wheat		Barley		Irish potatoes		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I
	Bu	Bu	Bu	Bu	Cwt	Cwt	Tons	Tons	AUM*	AUM*
1---------- Arbone	27	55	32	60	---	---	1.5	4.0	---	10.0
2---------- Arbone	25	50	30	60	---	---	1.0	3.0	---	7.5
3---------- Arbone-Hondoho	18	---	22	---	---	---	---	---	---	---
6---------- Arimo	25	70	30	80	---	---	---	4.0	---	10.0
7---------- Bahem	---	90	---	100	---	270	---	5.0	---	12.0
8---------- Bahem	---	80	---	90	---	260	---	4.0	---	10.0
9---------- Bancroft	30	---	35	---	---	---	2.0	---	---	---
10---------- Bancroft	25	---	30	---	---	---	1.5	---	---	---
11---------- Bancroft-Manila	27	---	32	---	---	---	1.5	---	---	---
12---------- Banida	35	70	40	---	---	---	2.0	3.5	---	---
13---------- Bear Lake-Bear Lake Variant	---	---	---	---	---	---	---	---	7.0	10.0
15---------- Broadhead-Yago	---	---	---	---	---	---	2.0	4.0	---	10.0
17---------- Broncho	---	30	---	35	---	140	---	2.5	---	6.0
21---------- Broxon	---	80	---	90	---	250	---	5.0	---	12.0
22---------- Broxon	---	70	---	80	---	240	---	4.0	---	10.0
38---------- Coalbank	25	---	30	---	---	---	---	---	---	---
39---------- Coalbank-Trailcreek-Lonigan	17	---	19	---	---	---	---	---	---	---
41---------- Downata-Bear Lake	---	---	---	---	---	---	---	---	7.0	10.0
42---------- Downey-Arimo	22	65	26	75	---	---	---	4.0	---	8.0
43---------- Downey-Arimo	17	57	21	67	---	---	---	3.0	---	7.0

See footnotes at end of table.

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Wheat		Barley		Irish potatoes		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I
	Bu	Bu	Bu	Bu	Cwt	Cwt	Tons	Tons	AUM*	AUM*
46----------------------------- Hades	25	---	30	---	---	---	2.0	---	---	---
49----------------------------- Hades-Lanoak	31	---	37	---	---	---	2.0	---	---	---
52----------------------------- Holmes	25	60	30	65	---	---	1.5	4.0	---	---
53----------------------------- Hondoho-Arbone	20	---	24	---	---	---	1.0	---	---	---
55----------------------------- Hondoho-Hades	21	---	24	---	---	---	---	---	---	---
57----------------------------- Inkom	---	45	---	55	---	---	---	---	7.0	10.0
58----------------------------- Inkom	30	80	35	90	---	---	2.5	4.5	6.0	11.0
62----------------------------- Joes	30	---	35	---	---	---	---	---	---	---
63----------------------------- Joes	30	---	35	---	---	---	---	---	---	---
64----------------------------- Joevar	35	80	40	90	---	---	2.0	5.5	---	13.0
65----------------------------- Lanoak	38	---	45	---	---	---	2.0	---	---	---
66----------------------------- Lanoak	38	---	45	---	---	---	2.0	---	---	---
67----------------------------- Lanoak	35	---	42	---	---	---	1.5	---	---	---
68----------------------------- Lanoak	33	---	40	---	---	---	1.5	---	---	---
70**:										
Lanoak-------------------------	38	---	45	---	---	---	2.0	---	---	---
Greys--------------------------	23	---	28	---	---	---	2.0	---	---	---
71**:										
Lanoak-------------------------	35	---	42	---	---	---	1.5	---	---	---
Greys--------------------------	23	---	28	---	---	---	2.0	---	---	---
72----------------------------- Lanoak-Hades	32	---	38	---	---	---	2.0	---	---	---
73----------------------------- Lanoak-Watercanyon-Rexburg	30	---	36	---	---	---	---	---	---	---
75----------------------------- Manila-Bancroft	33	---	38	---	---	---	2.1	---	---	---

See footnotes at end of table.

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Wheat		Barley		Irish potatoes		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I
	Bu	Bu	Bu	Bu	Cwt	Cwt	Tons	Tons	AUM*	AUM*
77 McDole-McDole Variant	---	90	---	100	---	---	---	5.1	---	12.0
81 Oxford	25	---	30	---	---	---	1.5	---	---	---
82 Oxford-Banida	30	---	35	---	---	---	2.1	---	---	---
87 Pocatello	25	90	---	100	---	270	---	4.0	---	10.0
88 Pocatello	25	75	---	85	---	250	---	3.0	---	7.5
89 Pocatello	20	60	---	65	---	---	---	3.0	---	7.5
90 Pocatello	20	---	---	---	---	---	---	---	---	---
91 Pocatello	20	---	---	---	---	---	---	---	---	---
93 Rexburg	35	80	40	90	---	250	2.0	5.0	---	---
94 Rexburg	35	70	40	80	---	230	2.0	4.0	---	---
95 Rexburg	35	---	40	---	---	---	2.0	---	---	---
97 Ririe	30	70	35	80	---	240	2.0	5.0	---	---
98 Ririe	30	70	35	80	---	220	2.0	4.0	---	---
99 Ririe	25	60	30	75	---	---	1.5	3.0	---	---
100 Ririe-Watercanyon	28	---	30	---	---	---	---	---	---	---
101 Ririe-Watercanyon	23	---	25	---	---	---	---	---	---	---
102 Ririe-Watercanyon	19	---	21	---	---	---	---	---	---	---
111 Tendoy	---	---	---	---	---	---	---	---	7.0	10.0
120 Watercanyon	15	---	15	---	---	---	---	---	---	---
122 Wursten	25	55	30	60	---	---	---	4.0	---	---

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* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

** See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES

[Only the soils that support rangeland vegetation suitable for grazing are listed]

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Compo-sition
		Kind of year	Dry weight		
			Lb/acre		Pct
1, 2 Arbone	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	30
		Normal	1,200	Mountain big sagebrush	10
		Unfavorable	800	Prairie junegrass	5
				Antelope bitterbrush	5
				Nevada bluegrass	5
				Letterman needlegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
3*:					
Arbone	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	30
		Normal	1,200	Mountain big sagebrush	10
		Unfavorable	800	Prairie junegrass	5
				Nevada bluegrass	5
				Letterman needlegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Antelope bitterbrush	5
Hondoho	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	30
		Normal	1,200	Letterman needlegrass	10
		Unfavorable	800	Mountain big sagebrush	10
				Nevada bluegrass	5
				Prairie junegrass	5
				Columbia needlegrass	5
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Sticky geranium	5
				Antelope bitterbrush	5
4*:					
Arbone	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	30
		Normal	1,200	Mountain big sagebrush	10
		Unfavorable	800	Prairie junegrass	5
				Antelope bitterbrush	5
				Nevada bluegrass	5
				Letterman needlegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
McCarey	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	30
		Normal	1,200	Mountain big sagebrush	10
		Unfavorable	800	Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
				Western wheatgrass	5
				Prairie junegrass	5
				Slender wheatgrass	5
Lava flows.					
5*:					
Arbone	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	30
		Normal	1,200	Mountain big sagebrush	10
		Unfavorable	800	Prairie junegrass	5
				Antelope bitterbrush	5
				Nevada bluegrass	5
				Letterman needlegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
Rubble land.					

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
6	Loamy 12-16" Ppt (013XY036I)	Favorable	1,600	Bluebunch wheatgrass	30
Arimo		Normal	1,000	Wyoming big sagebrush	20
		Unfavorable	600	Streambank wheatgrass	10
				Arrowleaf balsamroot	10
				Sandberg bluegrass	5
				Prairie junegrass	5
				Nevada bluegrass	5
9, 10	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	35
Bancroft		Normal	1,200	Arrowleaf balsamroot	10
		Unfavorable	800	Mountain big sagebrush	10
				Slender wheatgrass	5
				Letterman needlegrass	5
				Prairie junegrass	5
				Nevada bluegrass	5
11*:					
Bancroft	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	35
		Normal	1,200	Arrowleaf balsamroot	10
		Unfavorable	800	Mountain big sagebrush	10
				Slender wheatgrass	5
				Letterman needlegrass	5
				Prairie junegrass	5
				Nevada bluegrass	5
Manila	Loamy 16-22" Ppt (013XY005I)	Favorable	2,400	Bluebunch wheatgrass	40
		Normal	2,000	Mountain big sagebrush	10
		Unfavorable	1,400	Nevada bluegrass	5
				Columbia needlegrass	5
				Prairie junegrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
				Slender wheatgrass	5
				Geranium	5
13*:					
Bear Lake	Wet Meadow (013XY038I)	Favorable	4,500	Sedge	20
		Normal	3,600	Nebraska sedge	20
		Unfavorable	3,000	Tufted hairgrass	20
				Redtop	5
				Meadow foxtail	5
				Kentucky bluegrass	5
				Cinquefoil	5
				Clover	5
Bear Lake Variant	Wet Meadow (013XY038I)	Favorable	4,500	Sedge	20
		Normal	3,600	Nebraska sedge	20
		Unfavorable	3,600	Tufted hairgrass	20
				Kentucky bluegrass	5
				Redtop	5
				Meadow foxtail	5
				Cinquefoil	5
				Clover	5
14*:					
Broadhead	Loamy 16-22" Ppt (013XY005I)	Favorable	2,400	Bluebunch wheatgrass	40
		Normal	2,000	Columbia needlegrass	10
		Unfavorable	1,400	Slender wheatgrass	5
				Prairie junegrass	5
				Arrowleaf balsamroot	5
				Geranium	5
				Mountain big sagebrush	5

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
14*:					
Hades	Loamy 16-22" Ppt (013XY005I)	Favorable	2,400	Bluebunch wheatgrass	45
		Normal	2,000	Slender wheatgrass	10
		Unfavorable	1,400	Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Mountain big sagebrush	5
				Antelope bitterbrush	5
Yago	Stony 16-22" Ppt (013XY019I)	Favorable	1,800	Bluebunch wheatgrass	35
		Normal	1,100	Columbia needlegrass	5
		Unfavorable	600	Mountain brome	5
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Mountain big sagebrush	5
				Antelope bitterbrush	5
				Western snowberry	5
				Saskatoon serviceberry	5
15*, 16*:					
Broadhead	Loamy 16-22" Ppt (013XY005I)	Favorable	2,400	Bluebunch wheatgrass	40
		Normal	2,000	Columbia needlegrass	10
		Unfavorable	1,400	Slender wheatgrass	5
				Prairie junegrass	5
				Arrowleaf balsamroot	5
				Geranium	5
				Mountain big sagebrush	5
Yago	Stony 16-22" Ppt (013XY019I)	Favorable	1,800	Bluebunch wheatgrass	35
		Normal	1,100	Columbia needlegrass	5
		Unfavorable	600	Mountain brome	5
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Mountain big sagebrush	5
				Antelope bitterbrush	5
				Western snowberry	5
				Saskatoon serviceberry	5
18 Broncho	Stony 8-12" Ppt (011BY003I)	Favorable	1,200	Bluebunch wheatgrass	30
		Normal	800	Wyoming big sagebrush	15
		Unfavorable	400	Thurber needlegrass	10
				Western wheatgrass	5
				Needleandthread	5
				Arrowleaf balsamroot	5
				Tapertip hawksbeard	5
				Nevada bluegrass	5
				Sandberg bluegrass	5
19*:					
Broncho Variant	Stony 8-12" Ppt (011BY003I)	Favorable	1,200	Bluebunch wheatgrass	30
		Normal	800	Wyoming big sagebrush	15
		Unfavorable	400	Arrowleaf balsamroot	10
				Sandberg bluegrass	5
				Bottlebrush squirreltail	5
				Nevada bluegrass	5
				Needleandthread	5
				Hood phlox	5
Pocatello	South Slope Loamy 11-13" Ppt (011BY012I)	Favorable	800	Bluebunch wheatgrass	30
		Normal	500	Wyoming big sagebrush	15
		Unfavorable	300	Arrowleaf balsamroot	10
				Thurber needlegrass	5
				Sandberg bluegrass	5
				Tapertip hawksbeard	5
				Needlegrass	5
				Phlox	5

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production: Kind of year	Total production: Dry weight	Characteristic vegetation	Composition
			Lb/acre		Pct
20*:					
Broncho Variant	Stony 8-12" Ppt (011BY003I)	Favorable	1,200	Bluebunch wheatgrass	30
		Normal	800	Wyoming big sagebrush	15
		Unfavorable	400	Arrowleaf balsamroot	10
				Sandberg bluegrass	5
				Bottlebrush squirreltail	5
				Nevada bluegrass	5
				Needleandthread	5
				Hood phlox	5
Ririe	Steep Slopes 12-16" Ppt (013XY008I)	Favorable	1,500	Bluebunch wheatgrass	20
		Normal	1,100	Mountain big sagebrush	15
		Unfavorable	600	Western snowberry	10
				Slender wheatgrass	5
				Needlegrass	5
				Nevada bluegrass	5
				Prairie junegrass	5
				Western wheatgrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
Pocatello	South Slope Loamy 11-13" Ppt (011BY012I)	Favorable	800	Bluebunch wheatgrass	30
		Normal	500	Wyoming big sagebrush	15
		Unfavorable	300	Arrowleaf balsamroot	10
				Thurber needlegrass	5
				Sandberg bluegrass	5
				Tapertip hawksbeard	5
				Needlegrass	5
				Phlox	5
23*:					
Camelback	Steep Slopes 16-22" Ppt (013XY003I)	Favorable	2,000	Bluebunch wheatgrass	25
		Normal	1,500	Mountain big sagebrush	10
		Unfavorable	900	Nevada bluegrass	5
				Kentucky bluegrass	5
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Cutleaf balsamroot	5
				Antelope bitterbrush	5
				Western snowberry	5
				Saskatoon serviceberry	5
Cedarhill	Steep Slopes 12-16" Ppt (013XY008I)	Favorable	1,500	Bluebunch wheatgrass	25
		Normal	1,100	Mountain big sagebrush	20
		Unfavorable	600	Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
				Slender wheatgrass	5
				Western wheatgrass	5
				Letterman needlegrass	5
Lanoak	Steep Slopes 16-22" Ppt (013XY003I)	Favorable	2,000	Bluebunch wheatgrass	25
		Normal	1,500	Mountain big sagebrush	15
		Unfavorable	900	Western snowberry	10
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
				Saskatoon serviceberry	5
				Sticky geranium	5

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
24*:					
Camelback	Steep Slopes 16-22" Ppt (013XY003I)	Favorable	2,000	Bluebunch wheatgrass	25
		Normal	1,500	Mountain big sagebrush	10
		Unfavorable	900	Nevada bluegrass	5
				Kentucky bluegrass	5
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Cutleaf balsamroot	5
				Antelope bitterbrush	5
				Western snowberry	5
				Saskatoon serviceberry	5
Greys.					
25*:					
Camelback	Stony 16-22" Ppt (013XY019I)	Favorable	1,800	Bluebunch wheatgrass	25
		Normal	1,100	Nevada bluegrass	5
		Unfavorable	600	Kentucky bluegrass	5
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Cutleaf balsamroot	5
				Mountain big sagebrush	5
				Antelope bitterbrush	5
				Western snowberry	5
				Saskatoon serviceberry	5
Hades	Loamy 16-22" Ppt (013X005I)	Favorable	2,400	Bluebunch wheatgrass	45
		Normal	2,000	Slender wheatgrass	10
		Unfavorable	1,400	Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Mountain big sagebrush	5
				Antelope bitterbrush	5
26*:					
Camelback	Steep Slopes 16-22" Ppt (013XY003I)	Favorable	2,000	Bluebunch wheatgrass	25
		Normal	1,500	Mountain big sagebrush	10
		Unfavorable	900	Nevada bluegrass	5
				Kentucky bluegrass	5
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Cutleaf balsamroot	5
				Antelope bitterbrush	5
				Western snowberry	5
				Saskatoon serviceberry	5
Valmar	Steep Slopes 16-22" Ppt (013XY003I)	Favorable	2,000	Bluebunch wheatgrass	20
		Normal	1,500	Mountain big sagebrush	15
		Unfavorable	900	Nevada bluegrass	10
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5
				Western snowberry	5
Hades	Steep Slopes 16-22" Ppt (013XY003I)	Favorable	2,000	Bluebunch wheatgrass	20
		Normal	1,500	Mountain big sagebrush	15
		Unfavorable	900	Nevada bluegrass	8
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5
				Western snowberry	5

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
27*:					
Camelback Variant	Subalpine Loamy 16-22" Ppt (013XY022I)	Favorable	1,800	Slender wheatgrass	15
		Normal	1,400	Mountain brome	10
		Unfavorable	1,000	Spike-fescue	10
				Needlegrass	10
				Subalpine big sagebrush	10
				Nevada bluegrass	5
				Lupine	5
				Mountain snowberry	5
Valmar Variant	Subalpine Loamy 16-22" Ppt (013XY022I)	Favorable	1,400	Slender wheatgrass	15
		Normal	1,000	Mountain brome	10
		Unfavorable	750	Spike-fescue	10
				Needlegrass	10
				Subalpine big sagebrush	10
				Nevada bluegrass	5
				Lupine	5
				Mountain snowberry	5
29*:					
Cedarhill.					
Ireland	Steep Stony 16-22" Ppt (013XY015I)	Favorable	1,800	Bluebunch wheatgrass	20
		Normal	1,400	Curlleaf mountainmahogany	20
		Unfavorable	1,100	Mountain big sagebrush	10
				Nevada bluegrass	5
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Cutleaf balsamroot	5
				Tapertip hawksbeard	5
				Western snowberry	5
Rock outcrop.					
30*:					
Cedarhill.					
Ririe	Steep Slopes 12-16" Ppt (013XY008I)	Favorable	1,500	Bluebunch wheatgrass	20
		Normal	1,100	Mountain big sagebrush	15
		Unfavorable	600	Western snowberry	10
				Slender wheatgrass	5
				Needlegrass	5
				Nevada bluegrass	5
				Prairie junegrass	5
				Western wheatgrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
Watercanyon	South Slope Loamy 12-16" Ppt (013XY035I)	Favorable	1,300	Bluebunch wheatgrass	25
		Normal	800	Mountain big sagebrush	15
		Unfavorable	500	Thurber needlegrass	10
				Arrowleaf balsamroot	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Western wheatgrass	5
				Wyoming big sagebrush	5
				Antelope bitterbrush	5

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
32*:					
Cedarhill	Steep Slopes 12-16" Ppt (013XY008I)	Favorable	1,500	Bluebunch wheatgrass	25
		Normal	1,100	Mountain big sagebrush	20
		Unfavorable	600	Nevada bluegrass	5
				Slender wheatgrass	5
				Western wheatgrass	5
				Letterman needlegrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
Camelback	Steep Slopes 16-22" Ppt (013XY003I)	Favorable	2,000	Bluebunch wheatgrass	25
		Normal	1,500	Mountain big sagebrush	10
		Unfavorable	900	Nevada bluegrass	5
				Kentucky bluegrass	5
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Cutleaf balsamroot	5
				Antelope bitterbrush	5
				Western snowberry	5
				Saskatoon serviceberry	5
Moonlight	Loamy Tall Brush 16-22" Ppt (013XY020I)	Favorable	2,500	Rocky mountain maple	15
		Normal	1,800	Quaking aspen	15
		Unfavorable	1,000	Mountain brome	10
				Common chokecherry	10
				Blue wildrye	5
				Pine reedgrass	5
				Bearded wheatgrass	5
				Sedge	5
				Sticky geranium	5
33*:					
Cedarhill	Steep Slopes 12-16" Ppt (013XY008I)	Favorable	1,500	Bluebunch wheatgrass	25
		Normal	1,100	Mountain big sagebrush	20
		Unfavorable	600	Nevada bluegrass	5
				Slender wheatgrass	5
				Western wheatgrass	5
				Letterman needlegrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
Hades	Steep Slopes 16-22" Ppt (013XY003I)	Favorable	2,000	Bluebunch wheatgrass	20
		Normal	1,500	Mountain big sagebrush	15
		Unfavorable	900	Nevada bluegrass	8
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5
				Western snowberry	5
Ricrest	Steep Slopes 16-22" Ppt (013XY003I)	Favorable	2,000	Bluebunch wheatgrass	30
		Normal	1,300	Mountain big sagebrush	15
		Unfavorable	800	Western snowberry	10
				Nevada bluegrass	5
				Mountain brome	5
				Arrowleaf balsamroot	5
				Saskatoon serviceberry	5

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
34*:					
Cedarhill	Steep Slopes 12-16" Ppt	Favorable	1,500	Bluebunch wheatgrass	25
	(013XY008I)	Normal	1,100	Mountain big sagebrush	20
		Unfavorable	600	Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
				Slender wheatgrass	5
				Western wheatgrass	5
				Letterman needlegrass	5
Hondoho	Steep Slopes 12-16" Ppt	Favorable	1,500	Bluebunch wheatgrass	30
	(013XY008I)	Normal	1,100	Mountain big sagebrush	10
		Unfavorable	600	Prairie junegrass	5
				Wheatgrass	5
				Sandberg bluegrass	5
				Letterman needlegrass	5
				Arrowleaf balsamroot	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5
Arbone	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	30
		Normal	1,200	Mountain big sagebrush	10
		Unfavorable	800	Prairie junegrass	5
				Nevada bluegrass	5
				Letterman needlegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Antelope bitterbrush	5
35*:					
Cedarhill	Steep Slopes 12-16" Ppt	Favorable	1,500	Bluebunch wheatgrass	25
	(013XY008I)	Normal	1,100	Mountain big sagebrush	20
		Unfavorable	600	Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
				Slender wheatgrass	5
				Western wheatgrass	5
				Letterman needlegrass	5
Hondoho	Steep Slopes 12-16" Ppt	Favorable	1,500	Bluebunch wheatgrass	30
	(013XY008I)	Normal	1,100	Mountain big sagebrush	10
		Unfavorable	600	Prairie junegrass	5
				Wheatgrass	5
				Sandberg bluegrass	5
				Letterman needlegrass	5
				Arrowleaf balsamroot	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5
Ridgecrest	Steep Stony 12-16" Ppt	Favorable	1,300	Bluebunch wheatgrass	30
	(013XY026I)	Normal	900	Mountain big sagebrush	15
		Unfavorable	500	Bluegrass	10
				Needlegrass	5
				Aster	5
				Antelope bitterbrush	5
36*:					
Cedarhill	Steep Slopes 12-16" Ppt	Favorable	1,500	Bluebunch wheatgrass	25
	(013XY008I)	Normal	1,100	Mountain big sagebrush	20
		Unfavorable	600	Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
				Slender wheatgrass	5
				Western wheatgrass	5
				Letterman needlegrass	5

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
36*:					
Manila	Loamy 16-22" Ppt (013XY005I)	Favorable	2,400	Bluebunch wheatgrass	40
		Normal	2,000	Mountain big sagebrush	10
		Unfavorable	1,400	Nevada bluegrass	5
				Columbia needlegrass	5
				Prairie junegrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
				Slender wheatgrass	5
				Geranium	5
37*:					
Cedarhill	Steep Slopes 12-16" Ppt (013XY008I)	Favorable	1,500	Bluebunch wheatgrass	25
		Normal	1,100	Mountain big sagebrush	20
		Unfavorable	600	Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
				Slender wheatgrass	5
				Western wheatgrass	5
				Letterman needlegrass	5
Trailcreek	Ashy 13-16" Ppt (013XY009I)	Favorable	1,300	Bluebunch wheatgrass	20
		Normal	800	Mountain big sagebrush	15
		Unfavorable	400	Thurber needlegrass	10
				Arrowleaf balsamroot	10
				Sandberg bluegrass	5
				Indian ricegrass	5
				Needleandthread	5
				Antelope bitterbrush	5
Coalbank	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	35
		Normal	1,200	Mountain big sagebrush	15
		Unfavorable	800	Prairie junegrass	5
				Nevada bluegrass	5
				Letterman needlegrass	5
				Wheatgrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Antelope bitterbrush	5
38 Coalbank	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	35
		Normal	1,200	Mountain big sagebrush	15
		Unfavorable	800	Prairie junegrass	5
				Nevada bluegrass	5
				Letterman needlegrass	5
				Wheatgrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Antelope bitterbrush	5
39*, 40*:					
Coalbank	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	35
		Normal	1,200	Mountain big sagebrush	15
		Unfavorable	800	Prairie junegrass	5
				Nevada bluegrass	5
				Letterman needlegrass	5
				Wheatgrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Antelope bitterbrush	5

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
39*, 40*:					
Trailcreek	Ashy 13-16" Ppt (013XY009I)	Favorable	1,300	Bluebunch wheatgrass	20
		Normal	800	Mountain big sagebrush	15
		Unfavorable	400	Thurber needlegrass	10
				Arrowleaf balsamroot	10
				Sandberg bluegrass	5
				Indian ricegrass	5
				Needleandthread	5
				Antelope bitterbrush	5
Lonigan	Steep Slopes 12-16" Ppt (013XY008I)	Favorable	1,500	Bluebunch wheatgrass	25
		Normal	1,100	Mountain big sagebrush	25
		Unfavorable	600	Nevada bluegrass	5
				Letterman needlegrass	5
				Slender wheatgrass	5
				Western wheatgrass	5
				Arrowleaf balsamroot	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5
41*:					
Downata	Wet Meadow (013XY038I)	Favorable	4,500	Sedge	25
		Normal	3,600	Tufted hairgrass	20
		Unfavorable	3,000	Nebraska sedge	20
				Redtop	5
				Meadow foxtail	5
				Kentucky bluegrass	5
				Cinquefoil	5
				Clover	5
Bear Lake	Wet Meadow (013XY038I)	Favorable	4,500	Sedge	20
		Normal	3,600	Nebraska sedge	20
		Unfavorable	3,000	Tufted hairgrass	20
				Redtop	5
				Meadow foxtail	5
				Kentucky bluegrass	5
				Cinquefoil	5
				Clover	5
42*, 43*:					
Downey	Loamy 11-13" Ppt (013XY018I)	Favorable	1,100	Bluebunch wheatgrass	30
		Normal	800	Wyoming big sagebrush	20
		Unfavorable	500	Thurber needlegrass	10
				Arrowleaf balsamroot	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Prairie junegrass	5
Arimo	Loamy 12-16" Ppt (013XY036I)	Favorable	1,600	Bluebunch wheatgrass	30
		Normal	1,000	Wyoming big sagebrush	20
		Unfavorable	600	Arrowleaf balsamroot	10
				Streambank wheatgrass	10
				Sandberg bluegrass	5
				Prairie junegrass	5
				Nevada bluegrass	5

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
44*:					
Enochville	Semiwet Meadow (013XY039I)	Favorable	3,500	Sedge	15
		Normal	2,300	Slender wheatgrass	15
		Unfavorable	1,500	Basin wildrye	10
				Kentucky bluegrass	5
				Streambank wheatgrass	5
				Nevada bluegrass	5
				Western wheatgrass	5
				Bluebunch wheatgrass	5
				Willow	5
				Silver sagebrush	5
				Clover	5
Enochville Variant	Semiwet Meadow (013XY039I)	Favorable	3,500	Sedge	15
		Normal	2,300	Slender wheatgrass	15
		Unfavorable	1,500	Basin wildrye	10
				Kentucky bluegrass	5
				Streambank wheatgrass	5
				Nevada bluegrass	5
				Western wheatgrass	5
				Bluebunch wheatgrass	5
				Clover	5
				Willow	5
				Silver sagebrush	5
46	Loamy 16-22" Ppt (013XY005I)	Favorable	2,400	Bluebunch wheatgrass	45
Hades		Normal	2,000	Slender wheatgrass	10
		Unfavorable	1,400	Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Mountain big sagebrush	5
				Antelope bitterbrush	5
47*:					
Hades	Steep Slopes 16-22" Ppt	Favorable	2,000	Bluebunch wheatgrass	20
	(013XY003I)	Normal	1,500	Mountain big sagebrush	15
		Unfavorable	900	Nevada bluegrass	8
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5
				Western snowberry	5
Camelback	Steep Slopes 16-22" Ppt	Favorable	2,000	Bluebunch wheatgrass	25
	(013XY003I)	Normal	1,500	Mountain big sagebrush	10
		Unfavorable	900	Nevada bluegrass	5
				Kentucky bluegrass	5
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Cutleaf balsamroot	5
				Antelope bitterbrush	5
				Western snowberry	5
				Saskatoon serviceberry	5
Hondoho	Steep Slopes 12-16" Ppt	Favorable	1,500	Bluebunch wheatgrass	30
	(013XY008I)	Normal	1,100	Mountain big sagebrush	10
		Unfavorable	600	Prairie junegrass	5
				Wheatgrass	5
				Sandberg bluegrass	5
				Letterman needlegrass	5
				Arrowleaf balsamroot	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
48*:					
Hades	Loamy 16-22" Ppt (013XY005I)	Favorable	2,400	Bluebunch wheatgrass	45
		Normal	2,000	Slender wheatgrass	10
		Unfavorable	1,400	Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Mountain big sagebrush	5
				Antelope bitterbrush	5
Holmes	Stony 16-22" Ppt (013XY019I)	Favorable	1,800	Bluebunch wheatgrass	35
		Normal	1,100	Mountain big sagebrush	10
		Unfavorable	600	Nevada bluegrass	5
				Antelope bitterbrush	5
				Slender wheatgrass	5
				Letterman needlegrass	5
				Arrowleaf balsamroot	5
49*:					
Hades	Loamy 16-22" Ppt (013XY005I)	Favorable	2,400	Bluebunch wheatgrass	45
		Normal	2,000	Slender wheatgrass	10
		Unfavorable	1,400	Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Mountain big sagebrush	5
				Antelope bitterbrush	5
Lanoak	Loamy 16-22" Ppt (013XY005I)	Favorable	2,400	Bluebunch wheatgrass	45
		Normal	2,000	Mountain big sagebrush	10
		Unfavorable	1,400	Prairie junegrass	5
				Arrowleaf balsamroot	5
				Columbia needlegrass	5
				Antelope bitterbrush	5
				Sticky geranium	5
				Western snowberry	5
50*:					
Hades	Steep Slopes 16-22" Ppt (013XY003I)	Favorable	2,000	Bluebunch wheatgrass	20
		Normal	1,500	Mountain big sagebrush	15
		Unfavorable	900	Nevada bluegrass	8
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5
				Western snowberry	5
Lanoak	Steep Slopes 16-22" Ppt (013XY003I)	Favorable	2,000	Bluebunch wheatgrass	25
		Normal	1,500	Mountain big sagebrush	15
		Unfavorable	900	Western snowberry	10
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
				Saskatoon serviceberry	5
				Sticky geranium	5
Camelback	Steep Slopes 16-22" Ppt (013XY003I)	Favorable	2,000	Bluebunch wheatgrass	25
		Normal	1,500	Mountain big sagebrush	10
		Unfavorable	900	Nevada bluegrass	5
				Kentucky bluegrass	5
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Cutleaf balsamroot	5
				Antelope bitterbrush	5
				Western snowberry	5
				Saskatoon serviceberry	5

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
52	Stony 16-22" Ppt (013XY019I)	Favorable	1,800	Bluebunch wheatgrass	35
Holmes		Normal	1,100	Mountain big sagebrush	10
		Unfavorable	600	Nevada bluegrass	5
				Antelope bitterbrush	5
				Slender wheatgrass	5
				Letterman needlegrass	5
				Arrowleaf balsamroot	5
53*:					
Hondoho	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	30
		Normal	1,200	Letterman needlegrass	10
		Unfavorable	800	Mountain big sagebrush	10
				Nevada bluegrass	5
				Prairie junegrass	5
				Columbia needlegrass	5
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Sticky geranium	5
				Antelope bitterbrush	5
Arbone	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	30
		Normal	1,200	Mountain big sagebrush	10
		Unfavorable	800	Prairie junegrass	5
				Nevada bluegrass	5
				Letterman needlegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Antelope bitterbrush	5
54*:					
Hondoho	Steep Slopes 12-16" Ppt (013XY008I)	Favorable	1,500	Bluebunch wheatgrass	30
		Normal	1,100	Mountain big sagebrush	10
		Unfavorable	600	Prairie junegrass	5
				Wheatgrass	5
				Sandberg bluegrass	5
				Letterman needlegrass	5
				Arrowleaf balsamroot	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5
Arbone	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	30
		Normal	1,200	Mountain big sagebrush	10
		Unfavorable	800	Prairie junegrass	5
				Nevada bluegrass	5
				Letterman needlegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Antelope bitterbrush	5
Ririe	Steep Slopes 12-16" Ppt (013XY008I)	Favorable	1,500	Bluebunch wheatgrass	20
		Normal	1,100	Mountain big sagebrush	15
		Unfavorable	600	Western snowberry	10
				Slender wheatgrass	5
				Needlegrass	5
				Nevada bluegrass	5
				Prairie junegrass	5
				Western wheatgrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
55*:					
Hondoho	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	30
		Normal	1,200	Mountain big sagebrush	10
		Unfavorable	800	Prairie junegrass	5
				Sedge	5
				Wheatgrass	5
				Sandberg bluegrass	5
				Letterman needlegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Antelope bitterbrush	5
Hades	Loamy 16-22" Ppt (013XY005I)	Favorable	2,400	Bluebunch wheatgrass	45
		Normal	2,000	Slender wheatgrass	10
		Unfavorable	1,400	Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Mountain big sagebrush	5
				Antelope bitterbrush	5
56*:					
Hondoho	Steep Slopes 12-16" Ppt (013XY008I)	Favorable	1,500	Bluebunch wheatgrass	30
		Normal	1,100	Mountain big sagebrush	10
		Unfavorable	600	Prairie junegrass	5
				Wheatgrass	5
				Sandberg bluegrass	5
				Letterman needlegrass	5
				Arrowleaf balsamroot	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5
Lanoak	Steep Slopes 16-22" Ppt (013XY003I)	Favorable	2,000	Bluebunch wheatgrass	25
		Normal	1,500	Mountain big sagebrush	15
		Unfavorable	900	Western snowberry	10
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
				Saskatoon serviceberry	5
				Sticky geranium	5
Camelback	Steep Slopes 16-22" Ppt (013XY003I)	Favorable	2,000	Bluebunch wheatgrass	25
		Normal	1,500	Mountain big sagebrush	10
		Unfavorable	900	Nevada bluegrass	5
				Kentucky bluegrass	5
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Cutleaf balsamroot	5
				Antelope bitterbrush	5
				Western snowberry	5
				Saskatoon serviceberry	5
57 Inkom	Semiwet Meadow (013XY039I)	Favorable	4,000	Slender wheatgrass	20
		Normal	2,200	Sedge	15
		Unfavorable	1,600	Tufted hairgrass	10
				Basin wildrye	10
				Streambank wheatgrass	10
				Kentucky bluegrass	5
				Cinquefoil	5
				Clover	5

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
59*:					
Ireland	Steep Stony 16-22" Ppt (013XY015I)	Favorable	1,800	Bluebunch wheatgrass	20
		Normal	1,400	Curlleaf mountainmahogany	20
		Unfavorable	1,100	Mountain big sagebrush	10
				Nevada bluegrass	5
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Cutleaf balsamroot	5
				Tapertip hawksbeard	5
				Western snowberry	5
Camelback	Steep Slopes 16-22" Ppt (013XY003I)	Favorable	2,000	Bluebunch wheatgrass	25
		Normal	1,500	Mountain big sagebrush	10
		Unfavorable	900	Nevada bluegrass	5
				Kentucky bluegrass	5
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Cutleaf balsamroot	5
				Antelope bitterbrush	5
				Western snowberry	5
				Saskatoon serviceberry	5
Rock outcrop.					
60*:					
Ireland	Steep Stony 16-22" Ppt (013XY015I)	Favorable	1,800	Bluebunch wheatgrass	20
		Normal	1,400	Curlleaf mountainmahogany	20
		Unfavorable	1,100	Mountain big sagebrush	10
				Nevada bluegrass	5
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Cutleaf balsamroot	5
				Tapertip hawksbeard	5
				Western snowberry	5
Dateman.					
Pavohroo.					
61*:					
Ireland	Steep Stony 16-22" Ppt (013XY015I)	Favorable	1,800	Bluebunch wheatgrass	20
		Normal	1,400	Curlleaf mountainmahogany	20
		Unfavorable	1,100	Mountain big sagebrush	10
				Nevada bluegrass	5
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Cutleaf balsamroot	5
				Tapertip hawksbeard	5
				Western snowberry	5
Hades	Steep Slopes 16-22" Ppt (013XY003I)	Favorable	2,000	Bluebunch wheatgrass	20
		Normal	1,500	Mountain big sagebrush	15
		Unfavorable	900	Nevada bluegrass	8
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5
				Western snowberry	5
Cedarhill.					

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
62, 63	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	30
Joes		Normal	1,200	Mountain big sagebrush	10
		Unfavorable	800	Slender wheatgrass	5
				Letterman needlegrass	5
				Nevada bluegrass	5
				Prairie junegrass	5
				Streambank wheatgrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
64	Loamy 12-16" Ppt (013XY032I)	Favorable	1,800	Bluebunch wheatgrass	35
Joevar		Normal	1,200	Basin big sagebrush	15
		Unfavorable	800	Nevada bluegrass	10
				Streambank wheatgrass	5
				Prairie junegrass	5
				Needlegrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
65, 66, 67	Loamy 16-22" Ppt (013XY005I)	Favorable	2,400	Bluebunch wheatgrass	45
Lanoak		Normal	2,000	Mountain big sagebrush	10
		Unfavorable	1,400	Prairie junegrass	5
				Arrowleaf balsamroot	5
				Columbia needlegrass	5
				Antelope bitterbrush	5
				Sticky geranium	5
				Western snowberry	5
68	Steep Slopes 16-22" Ppt	Favorable	2,000	Bluebunch wheatgrass	25
Lanoak	(013XY003I)	Normal	1,500	Mountain big sagebrush	15
		Unfavorable	900	Western snowberry	10
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
				Saskatoon serviceberry	5
				Sticky geranium	5
69*:					
Lanoak	Steep Slopes 16-22" Ppt	Favorable	2,000	Bluebunch wheatgrass	25
	(013XY003I)	Normal	1,500	Mountain big sagebrush	15
		Unfavorable	900	Western snowberry	10
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
				Saskatoon serviceberry	5
				Sticky geranium	5
Camelback	Steep Slopes 16-22" Ppt	Favorable	2,000	Bluebunch wheatgrass	25
	(013XY003I)	Normal	1,500	Mountain big sagebrush	10
		Unfavorable	900	Nevada bluegrass	5
				Kentucky bluegrass	5
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Cutleaf balsamroot	5
				Antelope bitterbrush	5
				Western snowberry	5
				Saskatoon serviceberry	5
70*, 71*:					
Lanoak	Loamy 16-22" Ppt (013XY005I)	Favorable	2,400	Bluebunch wheatgrass	45
		Normal	2,000	Mountain big sagebrush	10
		Unfavorable	1,400	Prairie junegrass	5
				Arrowleaf balsamroot	5
				Columbia needlegrass	5
				Antelope bitterbrush	5
				Sticky geranium	5
				Western snowberry	5

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
70*, 71*:					
Greys.					
72*:					
Lanoak	Loamy 16-22" Ppt (013XY005I)	Favorable	2,400	Bluebunch wheatgrass	45
		Normal	2,000	Mountain big sagebrush	10
		Unfavorable	1,400	Prairie junegrass	5
				Arrowleaf balsamroot	5
				Columbia needlegrass	5
				Antelope bitterbrush	5
				Sticky geranium	5
				Western snowberry	5
Hades	Loamy 16-22" Ppt (013XY005I)	Favorable	2,400	Bluebunch wheatgrass	45
		Normal	2,000	Slender wheatgrass	10
		Unfavorable	1,400	Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Mountain big sagebrush	5
				Antelope bitterbrush	5
73*:					
Lanoak	Loamy 16-22" Ppt (013XY005I)	Favorable	2,400	Bluebunch wheatgrass	45
		Normal	2,000	Mountain big sagebrush	10
		Unfavorable	1,400	Prairie junegrass	5
				Arrowleaf balsamroot	5
				Columbia needlegrass	5
				Antelope bitterbrush	5
				Sticky geranium	5
				Western snowberry	5
Watercanyon	South Slope Loamy 12-16" Ppt (013XY035I)	Favorable	1,300	Bluebunch wheatgrass	25
		Normal	800	Mountain big sagebrush	15
		Unfavorable	500	Thurber needlegrass	10
				Arrowleaf balsamroot	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Western wheatgrass	5
				Wyoming big sagebrush	5
				Antelope bitterbrush	5
Rexburg	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	30
		Normal	1,200	Mountain big sagebrush	10
		Unfavorable	800	Prairie junegrass	5
				Nevada bluegrass	5
				Needlegrass	5
				Western wheatgrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
74*:					
Lava flows.					
McCarey	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	30
		Normal	1,200	Mountain big sagebrush	10
		Unfavorable	800	Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
				Western wheatgrass	5
				Prairie junegrass	5
				Slender wheatgrass	5

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
74*:					
McCarey Variant	Shallow Loamy 13-16" Ppt (013XY004I)	Favorable	1,000	Bluebunch wheatgrass	30
		Normal	700	Mountain big sagebrush	15
		Unfavorable	400	Nevada bluegrass	5
				Bottlebrush squirreltail	5
				Sandberg bluegrass	5
				Western wheatgrass	5
				Arrowleaf balsamroot	5
				Tapertip hawksbeard	5
				Threetip sagebrush	5
75*:					
Manila	Loamy 16-22" Ppt (013XY005I)	Favorable	2,400	Bluebunch wheatgrass	40
		Normal	2,000	Mountain big sagebrush	10
		Unfavorable	1,400	Nevada bluegrass	5
				Columbia needlegrass	5
				Prairie junegrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
				Slender wheatgrass	5
				Geranium	5
Bancroft	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	35
		Normal	1,200	Arrowleaf balsamroot	10
		Unfavorable	800	Mountain big sagebrush	10
				Slender wheatgrass	5
				Letterman needlegrass	5
				Prairie junegrass	5
				Nevada bluegrass	5
76*:					
Manila	Loamy 16-22" Ppt (013XY005I)	Favorable	2,400	Bluebunch wheatgrass	40
		Normal	2,000	Mountain big sagebrush	10
		Unfavorable	1,400	Nevada bluegrass	5
				Columbia needlegrass	5
				Prairie junegrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
				Slender wheatgrass	5
				Geranium	5
Cedarhill	Steep Slopes 12-16" Ppt (013XY008I)	Favorable	1,500	Bluebunch wheatgrass	25
		Normal	1,100	Mountain big sagebrush	20
		Unfavorable	600	Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
				Slender wheatgrass	5
				Western wheatgrass	5
				Letterman needlegrass	5
78	Loamy Tall Brush 16-22" Ppt (013XY020I)	Favorable	2,500	Rocky mountain maple	15
Moonlight		Normal	1,800	Quaking aspen	15
		Unfavorable	1,000	Mountain brome	10
				Common chokecherry	10
				Blue wildrye	5
				Pine reedgrass	5
				Bearded wheatgrass	5
				Sedge	5
				Sticky geranium	5

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
79*:					
Moonlight	Loamy Tall Brush 16-22" Ppt (013XY020I)	Favorable	2,500	Rocky mountain maple	15
		Normal	1,800	Quaking aspen	15
		Unfavorable	1,000	Mountain brome	10
				Common chokecherry	10
				Blue wildrye	5
				Pine reedgrass	5
				Bearded wheatgrass	5
				Sedge	5
				Sticky geranium	5
Camelback	Steep Slopes 16-22" Ppt (013XY003I)	Favorable	2,000	Bluebunch wheatgrass	25
		Normal	1,500	Mountain big sagebrush	10
		Unfavorable	900	Nevada bluegrass	5
				Kentucky bluegrass	5
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Cutleaf balsamroot	5
				Antelope bitterbrush	5
				Western snowberry	5
				Saskatoon serviceberry	5
80*:					
Moonlight	Loamy Tall Brush 16-22" Ppt (013XY020I)	Favorable	2,500	Rocky mountain maple	15
		Normal	1,800	Quaking aspen	15
		Unfavorable	1,000	Mountain brome	10
				Common chokecherry	10
				Blue wildrye	5
				Pine reedgrass	5
				Bearded wheatgrass	5
				Sedge	5
				Sticky geranium	5
Pavohroo.					
83*:					
Pavohroo.					
Moonlight	Loamy Tall Brush 16-22" Ppt (013XY020I)	Favorable	2,500	Rocky mountain maple	15
		Normal	1,800	Quaking aspen	15
		Unfavorable	1,000	Mountain brome	10
				Common chokecherry	10
				Blue wildrye	5
				Pine reedgrass	5
				Bearded wheatgrass	5
				Sedge	5
				Sticky geranium	5
87, 88, 89, 90, 91-Pocatello	Loamy 11-13" Ppt (013XY018I)	Favorable	1,300	Bluebunch wheatgrass	30
		Normal	800	Wyoming big sagebrush	15
		Unfavorable	400	Thurber needlegrass	10
				Arrowleaf balsamroot	10
				Sandberg bluegrass	5
				Tapertip hawksbeard	5
				Threetip sagebrush	5
92*:					
Portino	Loamy 8-12" Ppt (011BY001I)	Favorable	1,300	Bluebunch wheatgrass	25
		Normal	800	Wyoming big sagebrush	20
		Unfavorable	400	Thurber needlegrass	10
				Sandberg bluegrass	10
				Arrowleaf balsamroot	10
				Threetip sagebrush	5

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
92*:					
Thornock	Shallow Loam 8-12" Ppt (011BY002I)	Favorable	1,200	Bluebunch wheatgrass	30
		Normal	800	Wyoming big sagebrush	15
		Unfavorable	500	Thurber needlegrass	10
				Arrowleaf balsamroot	10
				Sandberg bluegrass	5
				Tapertip hawksbeard	5
				Threetip sagebrush	5
				Basin big sagebrush	5
93, 94, 95 Rexburg	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	30
		Normal	1,200	Mountain big sagebrush	10
		Unfavorable	800	Prairie junegrass	5
				Nevada bluegrass	5
				Needlegrass	5
				Western wheatgrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
96 Rexburg	Steep Slopes 12-16" Ppt (013XY008I)	Favorable	1,500	Bluebunch wheatgrass	20
		Normal	1,100	Mountain big sagebrush	15
		Unfavorable	600	Prairie junegrass	5
				Nevada bluegrass	5
				Needlegrass	5
				Western wheatgrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
97, 98, 99 Ririe	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	30
		Normal	1,200	Mountain big sagebrush	10
		Unfavorable	800	Slender wheatgrass	5
				Needlegrass	5
				Nevada bluegrass	5
				Prairie junegrass	5
				Western wheatgrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
100*, 101*:					
Ririe	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	30
		Normal	1,200	Mountain big sagebrush	10
		Unfavorable	800	Slender wheatgrass	5
				Needlegrass	5
				Nevada bluegrass	5
				Prairie junegrass	5
				Western wheatgrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
Watercanyon	South Slope Loamy 12-16" Ppt (013XY035I)	Favorable	1,300	Bluebunch wheatgrass	25
		Normal	800	Mountain big sagebrush	15
		Unfavorable	500	Thurber needlegrass	10
				Arrowleaf balsamroot	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Western wheatgrass	5
				Wyoming big sagebrush	5
				Antelope bitterbrush	5

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
102*:					
Ririe	Steep Slopes 12-16" Ppt (013XY008I)	Favorable	1,500	Bluebunch wheatgrass	20
		Normal	1,100	Mountain big sagebrush	15
		Unfavorable	600	Western snowberry	10
				Slender wheatgrass	5
				Needlegrass	5
				Nevada bluegrass	5
				Prairie junegrass	5
				Western wheatgrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
Watercanyon	South Slope Loamy 12-16" Ppt (013XY035I)	Favorable	1,300	Bluebunch wheatgrass	25
		Normal	800	Mountain big sagebrush	15
		Unfavorable	500	Thurber needlegrass	10
				Arrowleaf balsamroot	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Western wheatgrass	5
				Wyoming big sagebrush	5
				Antelope bitterbrush	5
103*:					
Ririe	Steep Slopes 12-16" Ppt (013XY008I)	Favorable	1,500	Bluebunch wheatgrass	20
		Normal	1,100	Mountain big sagebrush	15
		Unfavorable	600	Western snowberry	10
				Slender wheatgrass	5
				Needlegrass	5
				Nevada bluegrass	5
				Prairie junegrass	5
				Western wheatgrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
Watercanyon	South Slope Loamy 12-16" Ppt (013XY035I)	Favorable	1,300	Bluebunch wheatgrass	25
		Normal	800	Mountain big sagebrush	15
		Unfavorable	500	Thurber needlegrass	10
				Arrowleaf balsamroot	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Western wheatgrass	5
				Wyoming big sagebrush	5
				Antelope bitterbrush	5
Cedarhill.					
106*:					
Scout Variant.					
Camelback Variant	Subalpine Loamy 16-22" Ppt (013XY022I)	Favorable	1,800	Slender wheatgrass	15
		Normal	1,400	Mountain brome	10
		Unfavorable	1,000	Spike-fescue	10
				Needlegrass	10
				Subalpine big sagebrush	10
				Nevada bluegrass	5
				Lupine	5
				Mountain snowberry	5

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
109*:					
Swanner	Shallow Stony 12-16" Ppt (013XY014I)	Favorable	1,000	Bluebunch wheatgrass	35
		Normal	600	Low sagebrush	10
		Unfavorable	300	Sandberg bluegrass	5
				Needleandthread	5
				Arrowleaf balsamroot	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5
				Dwarf green rabbitbrush	5
Hondoho	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	30
		Normal	1,200	Mountain big sagebrush	10
		Unfavorable	800	Prairie junegrass	5
				Sedge	5
				Wheatgrass	5
				Sandberg bluegrass	5
				Letterman needlegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Antelope bitterbrush	5
110*:					
Swanner	Shallow Stony 12-16" Ppt (013XY014I)	Favorable	1,000	Bluebunch wheatgrass	35
		Normal	600	Low sagebrush	10
		Unfavorable	300	Sandberg bluegrass	5
				Needleandthread	5
				Arrowleaf balsamroot	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5
				Dwarf green rabbitbrush	5
Rock outcrop.					
111 Tendoy	Wet Meadow (013XY038I)	Favorable	4,500	Sedge	25
		Normal	3,600	Nebraska sedge	20
		Unfavorable	3,000	Tufted hairgrass	15
				Redtop	5
				Rush	5
				Meadow foxtail	5
				Clover	5
				Cinquefoil	5
112*: Toponce.					
Broadhead	Loamy 16-22" Ppt (013XY005I)	Favorable	2,400	Bluebunch wheatgrass	40
		Normal	2,000	Columbia needlegrass	10
		Unfavorable	1,400	Slender wheatgrass	5
				Prairie junegrass	5
				Arrowleaf balsamroot	5
				Geranium	5
				Mountain big sagebrush	5
115 Valmar	Steep Slopes 12-16" Ppt (013XY008I)	Favorable	1,500	Bluebunch wheatgrass	25
		Normal	1,100	Mountain big sagebrush	20
		Unfavorable	600	Nevada bluegrass	10
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Cutleaf balsamroot	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
116*:					
Valmar	Steep Slopes 16-22" Ppt	Favorable	2,000	Bluebunch wheatgrass	20
	(013XY003I)	Normal	1,500	Mountain big sagebrush	15
		Unfavorable	900	Nevada bluegrass	10
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5
				Western snowberry	5
Camelback	Steep Slopes 16-22" Ppt	Favorable	2,000	Bluebunch wheatgrass	25
	(013XY003I)	Normal	1,500	Mountain big sagebrush	10
		Unfavorable	900	Nevada bluegrass	5
				Kentucky bluegrass	5
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Cutleaf balsamroot	5
				Antelope bitterbrush	5
				Western snowberry	5
				Saskatoon serviceberry	5
Hades	Steep Slopes 16-22" Ppt	Favorable	2,000	Bluebunch wheatgrass	20
	(013XY003I)	Normal	1,500	Mountain big sagebrush	15
		Unfavorable	900	Nevada bluegrass	8
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5
				Western snowberry	5
117*:					
Valmar	Steep Slopes 16-22" Ppt	Favorable	2,000	Bluebunch wheatgrass	20
	(013XY003I)	Normal	1,500	Mountain big sagebrush	15
		Unfavorable	900	Nevada bluegrass	10
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5
				Western snowberry	5
Hades	Steep Slopes 16-22" Ppt	Favorable	2,000	Bluebunch wheatgrass	20
	(013XY003I)	Normal	1,500	Mountain big sagebrush	15
		Unfavorable	900	Nevada bluegrass	8
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5
				Western snowberry	5
118*:					
Valmar	Steep Stony 16-22" Ppt	Favorable	1,800	Curlleaf mountainmahogany	20
	(013XY015I)	Normal	1,400	Bluebunch wheatgrass	15
		Unfavorable	1,100	Nevada bluegrass	10
				Slender wheatgrass	10
				Mountain big sagebrush	10
				Arrowleaf balsamroot	5
				Cutleaf balsamroot	5
				Tapertip hawksbeard	5
				Western snowberry	5
Rock outcrop.					

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
119*:					
Valmar	Steep Slopes 12-16" Ppt (013XY008I)	Favorable	1,500	Bluebunch wheatgrass	25
		Normal	1,100	Mountain big sagebrush	20
		Unfavorable	600	Nevada bluegrass	10
				Slender wheatgrass	5
				Arrowleaf balsamroot	5
				Cutleaf balsamroot	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5
Watercanyon	South Slope Loamy 12-16" Ppt (013XY035I)	Favorable	1,300	Bluebunch wheatgrass	25
		Normal	800	Mountain big sagebrush	15
		Unfavorable	500	Thurber needlegrass	10
				Arrowleaf balsamroot	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Western wheatgrass	5
				Wyoming big sagebrush	5
				Antelope bitterbrush	5
Hondoho	Steep Slopes 12-16" Ppt (013XY008I)	Favorable	1,500	Bluebunch wheatgrass	30
		Normal	1,100	Mountain big sagebrush	10
		Unfavorable	600	Prairie junegrass	5
				Wheatgrass	5
				Sandberg bluegrass	5
				Letterman needlegrass	5
				Arrowleaf balsamroot	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5
120 Watercanyon	South Slope Loamy 12-16" Ppt (013XY035I)	Favorable	1,300	Bluebunch wheatgrass	25
		Normal	800	Mountain big sagebrush	15
		Unfavorable	500	Thurber needlegrass	10
				Arrowleaf balsamroot	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Western wheatgrass	5
				Wyoming big sagebrush	5
				Antelope bitterbrush	5
121*:					
Watercanyon	South Slope Loamy 12-16" Ppt (013XY035I)	Favorable	1,300	Bluebunch wheatgrass	25
		Normal	800	Mountain big sagebrush	15
		Unfavorable	500	Thurber needlegrass	10
				Arrowleaf balsamroot	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Western wheatgrass	5
				Wyoming big sagebrush	5
				Antelope bitterbrush	5
Swanner	Shallow Stony 12-16" Ppt (013XY014I)	Favorable	1,000	Bluebunch wheatgrass	35
		Normal	600	Low sagebrush	10
		Unfavorable	300	Sandberg bluegrass	5
				Needleandthread	5
				Arrowleaf balsamroot	5
				Tapertip hawksbeard	5
				Antelope bitterbrush	5
				Dwarf green rabbitbrush	5
Rock outcrop.					

See footnote at end of table.

TABLE 6.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
122 Wursten	Loamy 12-16" Ppt (013XY036I)	Favorable	1,600	Bluebunch wheatgrass	30
		Normal	1,000	Wyoming big sagebrush	15
		Unfavorable	600	Streambank wheatgrass	10
				Prairie junegrass	5
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
123*:					
Wursten	Loamy 12-16" Ppt (013XY036I)	Favorable	1,600	Bluebunch wheatgrass	30
		Normal	1,000	Wyoming big sagebrush	15
		Unfavorable	600	Streambank wheatgrass	10
				Prairie junegrass	5
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Arrowleaf balsamroot	5
				Antelope bitterbrush	5
Watercanyon Variant	Loamy 13-16" Ppt (013XY037I)	Favorable	1,100	Bluegrass	20
		Normal	700	Wyoming big sagebrush	20
		Unfavorable	400	Needleandthread	10
				Bottlebrush squirreltail	5
				Indian ricegrass	5
				Bluebunch wheatgrass	5
				Tall gray rabbitbrush	5
				Black greasewood	5
Hondoho	Loamy 13-16" Ppt (013XY001I)	Favorable	1,800	Bluebunch wheatgrass	30
		Normal	1,200	Mountain big sagebrush	10
		Unfavorable	800	Prairie junegrass	5
				Sedge	5
				Wheatgrass	5
				Sandberg bluegrass	5
				Letterman needlegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Antelope bitterbrush	5

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY

[Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that information was not available]

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	
24*: Camelback.								
Greys-------------	2R	Moderate	Slight	Slight	Moderate	Quaking aspen-------	65	
28----------------- Cedarhill	3R	Severe	Severe	Slight	Moderate	Utah juniper--------	105	Utah juniper.
29*: Cedarhill---------	3R	Severe	Severe	Slight	Moderate	Utah juniper--------	105	Utah juniper.
Ireland.								
Rock outcrop.								
30*: Cedarhill---------	3R	Severe	Severe	Slight	Moderate	Utah juniper--------	105	Utah juniper.
Ririe.								
Watercanyon.								
31*: Cedarhill---------	3R	Severe	Severe	Slight	Moderate	Utah juniper--------	105	Utah juniper.
Rock outcrop.								
45*: Greys-------------	2R	Moderate	Slight	Slight	Moderate	Quaking aspen-------	65	
Pavohroo----------	6A	Slight	Moderate	Slight	Severe	Douglas-fir---------	65	Douglas-fir.
Sedgway-----------	6R	Slight	Moderate	Slight	Severe	Douglas-fir---------	65	Douglas-fir.
51*: Harkness----------	7R	Severe	Slight	Slight	Severe	Lodgepole pine------ Douglas-fir--------- Subalpine fir-------	80 70 70	Lodgepole pine, Douglas-fir.
Sedgway-----------	6R	Moderate	Moderate	Slight	Severe	Douglas-fir---------	65	Douglas-fir.
Mikesell----------	5R	Severe	Slight	Moderate	Severe	Lodgepole pine------ Subalpine fir------- Douglas-fir---------	90 75 75	Lodgepole pine, Douglas-fir.
60*: Ireland.								
Dateman-----------	5R	Severe	Moderate	Slight	Moderate	Douglas-fir---------	60	Douglas-fir.
Pavohroo----------	6R	Severe	Moderate	Slight	Severe	Douglas-fir---------	65	Douglas-fir.
61*: Ireland.								
Hades.								
Cedarhill---------	3R	Severe	Severe	Slight	Moderate	Utah juniper--------	105	Utah juniper.

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	
70*, 71*: Lanoak.								
Greys	2R	Moderate	Slight	Slight	Moderate	Quaking aspen	65	
80*: Moonlight.								
Pavohroo	6R	Severe	Moderate	Slight	Severe	Douglas-fir	65	Douglas-fir.
83*: Pavohroo	6R	Severe	Moderate	Slight	Severe	Douglas-fir	65	Douglas-fir.
Moonlight.								
84*: Pavohroo	6R	Severe	Moderate	Slight	Severe	Douglas-fir	65	Douglas-fir.
Sedgway	6R	Moderate	Moderate	Slight	Severe	Douglas-fir	65	Douglas-fir.
Toponce	2R	Moderate	Slight	Slight	Severe	Quaking aspen	65	Quaking aspen.
103*: Ririe.								
Watercanyon.								
Cedarhill	3R	Moderate	Moderate	Slight	Moderate	Utah juniper	105	Utah juniper.
106*: Scout Variant	4R	Severe	Moderate	Slight	Moderate	Subalpine fir Lodgepole pine Douglas-fir	70 --- ---	Lodgepole pine, Douglas-fir.
Camelback Variant.								
107*: Sedgway	6R	Severe	Moderate	Slight	Severe	Douglas-fir	65	Douglas-fir.
Beaverdam	7R	Severe	Slight	Slight	Severe	Douglas-fir	70	Douglas-fir.
112*: Toponce	2R	Moderate	Slight	Slight	Severe	Quaking aspen	65	Quaking aspen.
Broadhead.								

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 8.--WOODLAND UNDERSTORY VEGETATION

[Only the soils suitable for production of commercial trees are listed]

Soil name and map symbol	Total production		Characteristic vegetation	Composition
	Kind of year	Dry weight		
		Lb/acre		Pct
23*:				
Camelback.				
Cedarhill	Favorable	500	Bluebunch wheatgrass	25
	Normal	300	Indian ricegrass	15
	Unfavorable	100	Utah juniper	10
			Nevada bluegrass	5
			Bottlebrush squirreltail	5
			Arrowleaf balsamroot	5
			Mountain big sagebrush	5
			Antelope bitterbrush	5
24*:				
Camelback.				
Greys	Favorable	2,500	Pine reedgrass	35
	Normal	1,500	Blue wildrye	5
	Unfavorable	900	Mountain brome	5
			Common snowberry	5
			Elk sedge	5
			Kentucky bluegrass	5
			Edible valerian	5
			Woods rose	5
			Sticky geranium	5
			Quaking aspen	5
28	Favorable	500	Bluebunch wheatgrass	25
Cedarhill	Normal	300	Indian ricegrass	15
	Unfavorable	100	Utah juniper	10
			Nevada bluegrass	5
			Bottlebrush squirreltail	5
			Arrowleaf balsamroot	5
			Mountain big sagebrush	5
			Antelope bitterbrush	5
29*:				
Cedarhill	Favorable	500	Bluebunch wheatgrass	25
	Normal	300	Indian ricegrass	15
	Unfavorable	100	Utah juniper	10
			Nevada bluegrass	5
			Bottlebrush squirreltail	5
			Arrowleaf balsamroot	5
			Mountain big sagebrush	5
			Antelope bitterbrush	5
Ireland.				
Rock outcrop.				
30*:				
Cedarhill	Favorable	500	Bluebunch wheatgrass	25
	Normal	300	Indian ricegrass	15
	Unfavorable	100	Utah juniper	10
			Nevada bluegrass	5
			Bottlebrush squirreltail	5
			Arrowleaf balsamroot	5
			Mountain big sagebrush	5
			Antelope bitterbrush	5
Ririe.				
Watercanyon.				

See footnote at end of table.

TABLE 8.--WOODLAND UNDERSTORY VEGETATION--Continued

Soil name and map symbol	Total production		Characteristic vegetation	Composition
	Kind of year	Dry weight		
		Lb/acre		Pct
31*:				
Cedarhill	Favorable	500	Bluebunch wheatgrass	25
	Normal	300	Indian ricegrass	15
	Unfavorable	100	Utah juniper	10
			Nevada bluegrass	5
			Bottlebrush squirreltail	5
			Arrowleaf balsamroot	5
			Mountain big sagebrush	5
			Antelope bitterbrush	5
Rock outcrop.				
34*:				
Cedarhill	Favorable	500	Bluebunch wheatgrass	25
	Normal	300	Indian ricegrass	15
	Unfavorable	100	Utah juniper	10
			Nevada bluegrass	5
			Bottlebrush squirreltail	5
			Arrowleaf balsamroot	5
			Mountain big sagebrush	5
			Antelope bitterbrush	5
Hondoho.				
Arbone.				
35*:				
Cedarhill	Favorable	500	Bluebunch wheatgrass	25
	Normal	300	Indian ricegrass	15
	Unfavorable	100	Utah juniper	10
			Nevada bluegrass	5
			Bottlebrush squirreltail	5
			Arrowleaf balsamroot	5
			Mountain big sagebrush	5
			Antelope bitterbrush	5
Hondoho.				
Ridgecrest.				
36*:				
Cedarhill	Favorable	500	Bluebunch wheatgrass	25
	Normal	300	Indian ricegrass	15
	Unfavorable	100	Utah juniper	10
			Nevada bluegrass	5
			Bottlebrush squirreltail	5
			Arrowleaf balsamroot	5
			Mountain big sagebrush	5
			Antelope bitterbrush	5
Manila.				
37*:				
Cedarhill	Favorable	500	Bluebunch wheatgrass	25
	Normal	300	Indian ricegrass	15
	Unfavorable	100	Utah juniper	10
			Nevada bluegrass	5
			Bottlebrush squirreltail	5
			Arrowleaf balsamroot	5
			Mountain big sagebrush	5
			Antelope bitterbrush	5
Trailcreek.				
Coalbank.				

See footnote at end of table.

TABLE 8.--WOODLAND UNDERSTORY VEGETATION--Continued

Soil name and map symbol	Total production		Characteristic vegetation	Composition
	Kind of year	Dry weight		
		Lb/acre		Pct
45*:				
Greys	Favorable	2,500	Pine reedgrass	35
	Normal	1,500	Blue wildrye	5
	Unfavorable	900	Mountain brome	5
			Common snowberry	5
			Elk sedge	5
			Kentucky bluegrass	5
			Edible valerian	5
			Woods rose	5
			Sticky geranium	5
			Quaking aspen	5
Pavohroo	Favorable	500	Mountain snowberry	20
	Normal	400	Pine reedgrass	10
	Unfavorable	200	Heartleaf arnica	10
			Elk sedge	5
			Blue wildrye	5
			Bearded wheatgrass	5
			Western meadowrue	5
			Sticky geranium	5
			Woods rose	5
			Myrtle pachystima	5
			Low Oregon-grape	5
Sedgway	Favorable	700	Pine reedgrass	45
	Normal	500	Elk sedge	5
	Unfavorable	300	Blue wildrye	5
			Bearded wheatgrass	5
			Mountain snowberry	5
			Low Oregon-grape	5
51*:				
Harkness	Favorable	700	Pine reedgrass	45
	Normal	500	Elk sedge	5
	Unfavorable	300	Blue wildrye	5
			Bearded wheatgrass	5
			Mountain snowberry	5
			Low Oregon-grape	5
Sedgway	Favorable	700	Pine reedgrass	45
	Normal	500	Elk sedge	5
	Unfavorable	300	Blue wildrye	5
			Bearded wheatgrass	5
			Mountain snowberry	5
			Low Oregon-grape	5
Mikesell	Favorable	700	Pine reedgrass	55
	Normal	500	Elk sedge	5
	Unfavorable	300	Heartleaf arnica	5
			Mountain snowberry	5
			Woods rose	5
			Blue wildrye	5
60*:				
Ireland.				

See footnote at end of table.

TABLE 8.--WOODLAND UNDERSTORY VEGETATION--Continued

Soil name and map symbol	Total production Kind of year	Total production Dry weight	Characteristic vegetation	Composition
		Lb/acre		Pct
60*:				
Dateman	Favorable	500	Mountain snowberry	15
	Normal	400	Pinegrass	10
	Unfavorable	200	Mountain brome	5
			Blue wildrye	5
			Elk sedge	5
			Blueleaf strawberry	5
			Sticky geranium	5
			Western meadowrue	5
			Heartleaf arnica	5
			Mountainlover	5
			Quaking aspen	5
			Woods rose	5
Pavohroo	Favorable	500	Mountain snowberry	20
	Normal	400	Pine reedgrass	10
	Unfavorable	200	Heartleaf arnica	10
			Elk sedge	5
			Blue wildrye	5
			Bearded wheatgrass	5
			Western meadowrue	5
			Sticky geranium	5
			Woods rose	5
			Myrtle pachystima	5
			Low Oregon-grape	5
61*: Ireland.				
Hades.				
Cedarhill	Favorable	500	Bluebunch wheatgrass	25
	Normal	300	Indian ricegrass	15
	Unfavorable	100	Utah juniper	10
			Nevada bluegrass	5
			Bottlebrush squirreltail	5
			Arrowleaf balsamroot	5
			Mountain big sagebrush	5
			Antelope bitterbrush	5
70*, 71*: Lanoak.				
Greys	Favorable	2,500	Pine reedgrass	35
	Normal	1,500	Blue wildrye	5
	Unfavorable	900	Mountain brome	5
			Common snowberry	5
			Elk sedge	5
			Kentucky bluegrass	5
			Edible valerian	5
			Woods rose	5
			Sticky geranium	5
			Quaking aspen	5
76*: Manila.				
Cedarhill	Favorable	500	Bluebunch wheatgrass	25
	Normal	300	Indian ricegrass	15
	Unfavorable	100	Utah juniper	10
			Nevada bluegrass	5
			Bottlebrush squirreltail	5
			Arrowleaf balsamroot	5
			Mountain big sagebrush	5
			Antelope bitterbrush	5

See footnote at end of table.

TABLE 8.--WOODLAND UNDERSTORY VEGETATION--Continued

Soil name and map symbol	Total production		Characteristic vegetation	Composition
	Kind of year	Dry weight		
		Lb/acre		Pct
80*:				
Moonlight.				
Pavohroo	Favorable	500	Mountain snowberry	20
	Normal	400	Pine reedgrass	10
	Unfavorable	200	Heartleaf arnica	10
			Elk sedge	5
			Blue wildrye	5
			Bearded wheatgrass	5
			Western meadowrue	5
			Sticky geranium	5
			Woods rose	5
			Myrtle pachystima	5
			Low Oregon-grape	5
83*:				
Pavohroo	Favorable	500	Mountain snowberry	20
	Normal	400	Pine reedgrass	10
	Unfavorable	200	Heartleaf arnica	10
			Elk sedge	5
			Blue wildrye	5
			Bearded wheatgrass	5
			Western meadowrue	5
			Sticky geranium	5
			Woods rose	5
			Myrtle pachystima	5
			Low Oregon-grape	5
Moonlight.				
84*:				
Pavohroo	Favorable	500	Mountain snowberry	20
	Normal	400	Pine reedgrass	10
	Unfavorable	200	Heartleaf arnica	10
			Elk sedge	5
			Blue wildrye	5
			Bearded wheatgrass	5
			Western meadowrue	5
			Sticky geranium	5
			Woods rose	5
			Myrtle pachystima	5
			Low Oregon-grape	5
Sedgway	Favorable	700	Pine reedgrass	45
	Normal	500	Elk sedge	5
	Unfavorable	300	Blue wildrye	5
			Bearded wheatgrass	5
			Mountain snowberry	5
			Low Oregon-grape	5
Toponce	Favorable	2,500	Pine reedgrass	30
	Normal	1,500	Kentucky bluegrass	10
	Unfavorable	900	Mountain brome	5
			Blue wildrye	5
			Elk sedge	5
			Sticky geranium	5
			Groundsel	5
			Woods rose	5
			Common snowberry	5
			Quaking aspen	5
103*:				
Ririe.				
Watercanyon.				

See footnote at end of table.

TABLE 8.--WOODLAND UNDERSTORY VEGETATION--Continued

Soil name and map symbol	Total production		Characteristic vegetation	Composition
	Kind of year	Dry weight		
		Lb/acre		Pct
103*:				
Cedarhill	Favorable	500	Bluebunch wheatgrass	25
	Normal	300	Indian ricegrass	15
	Unfavorable	100	Utah juniper	10
			Nevada bluegrass	5
			Bottlebrush squirreltail	5
			Arrowleaf balsamroot	5
			Mountain big sagebrush	5
			Antelope bitterbrush	5
106*:				
Scout Variant	Favorable	700	Pine reedgrass	55
	Normal	500	Elk sedge	5
	Unfavorable	300	Heartleaf arnica	5
			Mountain snowberry	5
			Woods rose	5
			Blue wildrye	5
Camelback Variant.				
107*:				
Sedgway	Favorable	700	Pine reedgrass	45
	Normal	500	Elk sedge	5
	Unfavorable	300	Blue wildrye	5
			Bearded wheatgrass	5
			Mountain snowberry	5
			Low Oregon-grape	5
Beaverdam	Favorable	700	Pine reedgrass	45
	Normal	500	Elk sedge	5
	Unfavorable	300	Blue wildrye	5
			Bearded wheatgrass	5
			Mountain snowberry	5
			Low Oregon-grape	5
112*:				
Toponce	Favorable	2,500	Pine reedgrass	30
	Normal	1,500	Kentucky bluegrass	10
	Unfavorable	900	Mountain brome	5
			Blue wildrye	5
			Elk sedge	5
			Sticky geranium	5
			Groundsel	5
			Woods rose	5
			Common snowberry	5
			Quaking aspen	5
Broadhead.				

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 9.--WINDBREAKS AND ENVIRONMENTAL PLANTINGS

[The symbol < means less than. Absence of an entry indicates that trees generally do not grow to the given height on that soil. Only the soils suited to windbreaks and enviromental plantings are listed]

Soil name and map symbol	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35
6 Arimo	Nanking cherry, Peking cotoneaster, European privet.	Lilac, Rocky Mountain juniper, Siberian peashrub.	Blue spruce, Scotch pine, Norway spruce.	Golden willow, idahybrid poplar, Russian-olive.
7, 8 Bahem	Peking cotoneaster	Tatarian honeysuckle, Rocky Mountain juniper, Siberian peashrub, lilac.	Norway spruce, Scotch pine, blue spruce.	Idahybrid poplar, Russian-olive, golden willow.
17 Broncho	Peking cotoneaster, Nanking cherry.	Siberian peashrub, Rocky Mountain juniper.	Russian-olive, Scotch pine.	Idahybrid poplar, golden willow.
21, 22 Broxon	Peking cotoneaster	Rocky Mountain juniper, Siberian peashrub, lilac, Tatarian honeysuckle.	Norway spruce, Scotch pine, blue spruce.	Idahybrid poplar, golden willow, Russian-olive.
42*:				
Downey	Nanking cherry, Peking cotoneaster, European privet.	Lilac, Rocky Mountain juniper, Siberian peashrub.	Blue spruce, Scotch pine, Norway spruce.	Golden willow, idahybrid poplar, Russian-olive.
Arimo	Nanking cherry, Peking cotoneaster, European privet.	Lilac, Rocky Mountain juniper, Siberian peashrub.	Blue spruce, Scotch pine, Norway spruce.	Golden willow, idahybrid poplar, Russian-olive.
77*:				
McDole	Peking cotoneaster, Nanking cherry.	Siberian peashrub, lilac, Tatarian honeysuckle, Rocky Mountain juniper.	Green ash, Scotch pine, blue spruce.	Russian-olive, golden willow, idahybrid poplar.
McDole Variant	Peking cotoneaster, Nanking cherry.	Tatarian honeysuckle, Siberian peashrub, lilac, Rocky Mountain juniper.	Blue spruce, Scotch pine.	Russian-olive, golden willow, idahybrid poplar.
87, 88, 89 Pocatello	Nanking cherry	Siberian peashrub, lilac, Rocky Mountain juniper, Tatarian honeysuckle.	Green ash, Austrian pine, Scotch pine, blue spruce.	Russian-olive, idahybrid poplar, golden willow.
113*, 114*: Urban land.				
Bahem	Peking cotoneaster	Tatarian honeysuckle, Rocky Mountain juniper, Siberian peashrub, lilac.	Norway spruce, Scotch pine, blue spruce.	Idahybrid poplar, Russian-olive, golden willow.
Broxon	Peking cotoneaster	Rocky Mountain juniper, Siberian peashrub, lilac, Tatarian honeysuckle.	Norway spruce, Scotch pine, blue spruce.	Idahybrid poplar, golden willow, Russian-olive.

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* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 10.--RECREATIONAL DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1 Arbone	Moderate: dusty.	Moderate: dusty.	Moderate: slope, dusty.	Severe: erodes easily.	Slight.
2 Arbone	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
3*:					
Arbone	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope, dusty.	Severe: slope.
Hondoho	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope, dusty.	Severe: slope.
4*:					
Arbone	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
McCarey	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Severe: erodes easily.	Moderate: slope, thin layer.
Lava flows.					
5*:					
Arbone	Moderate: dusty.	Moderate: dusty.	Moderate: slope, dusty.	Severe; erodes easily.	Slight.
Rubble land.					
6 Arimo	Slight	Slight	Moderate: small stones.	Severe: erodes easily.	Slight.
7 Bahem	Moderate: dusty.	Moderate: dusty.	Moderate: dusty.	Severe: erodes easily.	Slight.
8 Bahem	Moderate: dusty.	Moderate: dusty.	Moderate: slope, dusty.	Severe: erodes easily.	Slight.
9 Bancroft	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
10 Bancroft	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
11*:					
Bancroft	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
Manila	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
12 Banida	Severe: percs slowly.	Severe: percs slowly.	Severe: percs slowly.	Severe: erodes easily.	Slight.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
13*:					
Bear Lake	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness, erodes easily.	Severe: wetness, flooding.
Bear Lake Variant	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
14*:					
Broadhead	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Moderate: dusty.	Moderate: slope.
Hades	Moderate: slope, small stones, dusty.	Moderate: slope, small stones, dusty.	Severe: slope, small stones.	Moderate: dusty.	Moderate: small stones, slope.
Yago	Severe: large stones.	Severe: large stones.	Severe: large stones, slope, small stones.	Severe: large stones.	Severe: large stones.
15*:					
Broadhead	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Moderate: dusty.	Moderate: slope.
Yago	Severe: large stones.	Severe: large stones.	Severe: large stones, slope, small stones.	Severe: large stones.	Severe: large stones.
16*:					
Broadhead	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope, dusty.	Severe: slope.
Yago	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope, small stones.	Severe: large stones.	Severe: large stones, slope.
17 Broncho	Moderate: large stones, dusty.	Moderate: large stones, dusty.	Severe: large stones.	Moderate: large stones, dusty.	Severe: large stones, droughty.
18 Broncho	Severe: large stones.	Severe: large stones.	Severe: large stones, slope, small stones.	Moderate: large stones, dusty.	Severe: large stones, droughty.
19*:					
Broncho Variant	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Pocatello	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
20*:					
Broncho Variant------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Ririe----------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
Pocatello------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
21------------------- Broxon	Moderate: dusty.	Moderate: dusty.	Moderate: dusty.	Severe: erodes easily.	Slight.
22------------------- Broxon	Moderate: dusty.	Moderate: dusty.	Moderate: slope, dusty.	Severe: erodes easily.	Slight.
23*:					
Camelback------------	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
Cedarhill------------	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: slope.
Lanoak---------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
24*:					
Camelback------------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Greys----------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
25*:					
Camelback------------	Severe: large stones.	Severe: large stones.	Severe: large stones, slope, small stones.	Severe: large stones.	Severe: large stones.
Hades----------------	Moderate: slope, small stones, dusty.	Moderate: slope, small stones, dusty.	Severe: slope, small stones.	Moderate: dusty.	Moderate: small stones, slope.
26*:					
Camelback------------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Valmar---------------	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
26*: Hades	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
27*: Camelback Variant	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Valmar Variant	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
28 Cedarhill	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: slope.
29*: Cedarhill	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: slope.
Ireland	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: small stones, large stones, slope.
Rock outcrop.					
30*: Cedarhill	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: slope.
Ririe	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
Watercanyon	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
31*: Cedarhill	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: slope.
Rock outcrop.					
32*: Cedarhill	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Camelback	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
32*:					
Moonlight	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
33*:					
Cedarhill	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Hades	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Ricrest	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
34*:					
Cedarhill	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: slope.
Hondoho	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
Arbone	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
35*:					
Cedarhill	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: slope.
Hondoho	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
Ridgecrest	Severe: slope, small stones.	Severe: slope, small stones.	Severe: large stones, slope, small stones.	Severe: large stones, slope.	Severe: small stones, large stones.
36*:					
Cedarhill	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: slope.
Manila	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
37*:					
Cedarhill	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: slope.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
37*:					
Trailcreek	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
Coalbank	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
38 Coalbank	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: droughty, slope.
39*:					
Coalbank	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
Trailcreek	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
Lonigan	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Moderate: large stones, slope.	Severe: slope.
40*:					
Coalbank	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
Trailcreek	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
Lonigan	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: slope.
41*:					
Downata	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flocding.	Severe: wetness.	Severe: wetness, flooding.
Bear Lake	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness, erodes easily.	Severe: wetness, flooding.
42*:					
Downey	Moderate: small stones, dusty.	Moderate: small stones, dusty.	Severe: small stones.	Severe: erodes easily.	Moderate: small stones, droughty.
Arimo	Slight	Slight	Moderate: small stones.	Severe: erodes easily.	Slight.
43*:					
Downey	Moderate: small stones, dusty.	Moderate: small stones, dusty.	Severe: small stones.	Severe: erodes easily.	Moderate: small stones, droughty.
Arimo	Slight	Slight	Moderate: slope, small stones.	Severe: erodes easily.	Slight.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
44*:					
Enochville	Severe: flooding, wetness.	Moderate: flooding, wetness, percs slowly.	Severe: wetness, flooding.	Moderate: wetness, flooding.	Severe: flooding.
Enochville Variant	Severe: flooding, wetness.	Moderate: flooding, wetness, small stones.	Severe: small stones, wetness, flooding.	Moderate: wetness, flooding.	Severe: flooding.
45*:					
Greys	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
Pavohroo	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight	Moderate: slope.
Sedgway	Moderate: slope, percs slowly, small stones.	Moderate: slope, percs slowly, small stones.	Severe: slope.	Severe: erodes easily.	Moderate: droughty, slope, small stones.
46 Hades	Moderate: slope, small stones, dusty.	Moderate: slope, small stones, dusty.	Severe: slope, small stones.	Moderate: dusty.	Moderate: small stones, slope.
47*:					
Hades	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Camelback	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Hondoho	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
48*:					
Hades	Moderate: small stones, dusty.	Moderate: small stones, dusty.	Severe: small stones.	Moderate: dusty.	Moderate: small stones.
Holmes	Severe: large stones.	Severe: large stones.	Severe: large stones, slope, small stones.	Severe: large stones.	Severe: large stones.
49*:					
Hades	Moderate: slope, small stones, dusty.	Moderate: slope, small stones, dusty.	Severe: slope, small stones.	Moderate: dusty.	Moderate: small stones, slope.
Lanoak	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
50*:					
Hades	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
50*:					
Lanoak	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
Camelback	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
51*:					
Harkness	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
Sedgway	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
Mikesell	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
52 Holmes	Moderate: small stones.	Moderate: small stones.	Severe: small stones.	Slight	Moderate: small stones, droughty.
53*:					
Hondoho	Moderate: slope, small stones, dusty.	Moderate: slope, small stones, dusty.	Severe: slope, small stones.	Moderate: dusty.	Moderate: small stones, large stones, slope.
Arbone	Moderate: slope, small stones, dusty.	Moderate: slope, small stones, dusty.	Severe: slope, small stones.	Moderate: dusty.	Moderate: small stones, slope.
54*:					
Hondoho	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
Arbone	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Ririe	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
55*:					
Hondoho	Moderate: large stones, dusty, slope.	Moderate: large stones, dusty, slope.	Severe: large stones, slope, small stones.	Moderate: large stones, dusty.	Severe: large stones.
Hades	Moderate: slope, small stones, dusty.	Moderate: slope, small stones, dusty.	Severe: slope, small stones.	Moderate: dusty.	Moderate: small stones, slope.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
56*:					
Hondoho	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
Lanoak	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope, erodes easily.	Severe: slope.
Camelback	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
57 Inkom	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness, erodes easily.	Severe: wetness, flooding.
58 Inkom	Severe: flooding.	Moderate: wetness.	Moderate: wetness, flooding.	Severe: erodes easily.	Moderate: flooding.
59*:					
Ireland	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: small stones, large stones, slope.
Camelback	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
Rock outcrop.					
60*:					
Ireland	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: small stones, large stones, slope.
Dateman	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: slope.
Pavohroo	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
61*:					
Ireland	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: small stones, large stones, slope.
Hades	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Cedarhill	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: slope.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
62-------------------- Joes	Moderate: dusty.	Moderate: dusty.	Moderate: slope, dusty.	Severe: erodes easily.	Slight.
63-------------------- Joes	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
64-------------------- Joevar	Severe: flooding.	Moderate: dusty.	Moderate: dusty.	Severe: erodes easily.	Slight.
65-------------------- Lanoak	Moderate: dusty.	Moderate: dusty.	Moderate: slope, dusty.	Severe: erodes easily.	Slight.
66-------------------- Lanoak	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
67-------------------- Lanoak	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
68-------------------- Lanoak	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
69*:					
Lanoak---------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
Camelback------------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
70*:					
Lanoak---------------	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
Greys----------------	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
71*:					
Lanoak---------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
Greys----------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
72*:					
Lanoak---------------	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
Hades----------------	Moderate: slope, small stones, dusty.	Moderate: slope, small stones, dusty.	Severe: slope, small stones.	Moderate: dusty.	Moderate: small stones, slope.
73*:					
Lanoak---------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
73*:					
Watercanyon	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
Rexburg	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
74*:					
Lava flows.					
McCarey	Moderate: dusty.	Moderate: dusty.	Moderate: slope, depth to rock, dusty.	Severe: erodes easily.	Moderate: thin layer.
McCarey Variant	Severe: large stones, depth to rock.	Severe: large stones, depth to rock.	Severe: large stones, small stones.	Severe: large stones.	Severe: large stones, thin layer.
75*:					
Manila	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
Bancroft	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
76*:					
Manila	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
Cedarhill	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: slope.
77*:					
McDole	Severe: flooding.	Moderate: dusty.	Moderate: dusty.	Severe: erodes easily.	Slight.
McDole Variant	Severe: flooding.	Slight	Moderate: flooding.	Severe: erodes easily.	Slight.
78 Moonlight	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
79*:					
Moonlight	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Camelback	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
80*:					
Moonlight	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Pavohroo	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
81-------------------- Oxford	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
82*:					
Oxford---------------	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Severe: erodes easily.	Slight.
Banida---------------	Severe: percs slowly.	Severe: percs slowly.	Severe: percs slowly.	Severe: erodes easily.	Slight.
83*:					
Pavohroo-------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Moonlight------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
84*:					
Pavohroo-------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Sedgway--------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
Toponce--------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
85*, 86*. Pits					
87-------------------- Pocatello	Moderate: dusty.	Moderate: dusty.	Moderate: slope, dusty.	Severe: erodes easily.	Slight.
88-------------------- Pocatello	Moderate: dusty.	Moderate: dusty.	Severe: slope.	Severe: erodes easily.	Slight.
89-------------------- Pocatello	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
90-------------------- Pocatello	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
91-------------------- Pocatello	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
92*:					
Portino--------------	Moderate: dusty.	Moderate: dusty.	Moderate: dusty.	Severe: erodes easily.	Moderate: large stones, thin layer.
Thornock-------------	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Moderate: large stones, dusty.	Severe: thin layer.
93-------------------- Rexburg	Moderate: dusty.	Moderate: dusty.	Moderate: slope, dusty.	Severe: erodes easily.	Slight.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
94-------------------- Rexburg	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
95-------------------- Rexburg	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
96-------------------- Rexburg	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
97-------------------- Ririe	Moderate: dusty.	Moderate: dusty.	Moderate: slope, dusty.	Severe: erodes easily.	Slight.
98-------------------- Ririe	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
99-------------------- Ririe	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
100*:					
Ririe-----------------	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
Watercanyon----------	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
101*:					
Ririe-----------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
Watercanyon----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
102*:					
Ririe-----------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
Watercanyon----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
103*:					
Ririe-----------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
Watercanyon----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
Cedarhill------------	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Moderate: large stones, slope, dusty.	Severe: slope.
104*. Rock outcrop					
105*: Rubble land.					

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
105*: Haploxerolls.					
106*: Scout Variant	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Camelback Variant	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
107*: Sedgway	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
Beaverdam	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
108*. Slickens					
109*: Swanner	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: large stones, slope.	Severe: large stones.	Severe: large stones, slope, thin layer.
Hondoho	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Moderate: large stones, slope, dusty.	Severe: large stones, slope.
110*: Swanner	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: large stones, slope.	Severe: large stones, slope.	Severe: large stones, slope, thin layer.
Rock outcrop.					
111 Tendoy	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding, flooding.	Severe: ponding, erodes easily.	Severe: ponding, flooding.
112*: Toponce	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
Broadhead	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope, dusty.	Severe: slope.
113*: Urban land.					
Bahem	Moderate: dusty.	Moderate: dusty.	Moderate: dusty.	Severe: erodes easily.	Slight.
Broxon	Moderate: dusty.	Moderate: dusty.	Moderate: dusty.	Severe: erodes easily.	Slight.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
114*: Urban land.					
Bahem	Moderate: dusty.	Moderate: dusty.	Moderate: slope, dusty.	Severe: erodes easily.	Slight.
Broxon	Moderate: dusty.	Moderate: dusty.	Moderate: slope, dusty.	Severe: erodes easily.	Slight.
115 Valmar	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
116*: Valmar	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
Camelback	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Hades	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
117*: Valmar	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
Hades	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
118*: Valmar	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
Rock outcrop.					
119*: Valmar	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
Watercanyon	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
Hondoho	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
120 Watercanyon	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
121*:					
Watercanyon----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
Swanner--------------	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: large stones, slope.	Severe: large stones, slope.	Severe: large stones, slope, thin layer.
Rock outcrop.					
122------------------ Wursten	Moderate: small stones.	Moderate: small stones.	Severe: small stones.	Slight----------	Moderate: small stones, large stones.
123*:					
Wursten--------------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Watercanyon Variant--	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
Hondoho--------------	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 11.--WILDLIFE HABITAT

[See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
1 Arbone	Fair	Fair	Good	---	Good	Poor	Very poor.	Fair	---	Very poor.	Good.
2 Arbone	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
3*:											
Arbone	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Hondoho	Fair	Good	Good	---	Good	Very poor.	Very poor.	Good	---	Very poor.	Good.
4*:											
Arbone	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
McCarey	Poor	Poor	Good	---	Fair	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Lava flows.											
5*:											
Arbone	Fair	Fair	Good	---	Good	Poor	Very poor.	Fair	---	Very poor.	Good.
Rubble land.											
6 Arimo	Fair	Good	Good	---	Good	Very poor.	Very poor.	Good	---	Very poor.	Good.
7, 8 Bahem	Good	Good	Good	---	Good	Poor	Very poor.	Good	---	Very poor.	Good.
9 Bancroft	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
10 Bancroft	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
11*:											
Bancroft	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Manila	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
12 Banida	Fair	Fair	Good	---	Good	Poor	Poor	Fair	---	Poor	Good.
13*:											
Bear Lake	Very poor.	Poor	Good	---	Poor	Good	Good	Poor	---	Good	Fair.
Bear Lake Variant	Very poor.	Poor	Good	---	Poor	Good	Good	Poor	---	Good	Fair.
14*:											
Broadhead	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.

See footnote at end of table.

TABLE 11.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
14*:											
Hades	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Yago	Very poor.	Very poor.	Good	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
15*, 16*:											
Broadhead	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Yago	Very poor.	Very poor.	Good	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
17 Broncho	Poor	Fair	Fair	---	Fair	Very poor.	Very poor.	Fair	---	Very poor.	Fair.
18 Broncho	Very poor.	Very poor.	Very poor.	---	Poor	Very poor.	Very poor.	Very poor.	---	Very poor.	Very poor.
19*:											
Broncho Variant	Very poor.	Very poor.	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
Pocatello	Poor	Poor	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
20*:											
Broncho Variant	Very poor.	Very poor.	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
Ririe	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Pocatello	Poor	Poor	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
21, 22 Broxon	Good	Good	Good	---	Good	Poor	Very poor.	Good	---	Very poor.	Good.
23*:											
Camelback	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
Cedarhill	Very poor.	Very poor.	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair
Lanoak	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
24*:											
Camelback	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Greys	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.	---
25*:											
Camelback	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
Hades	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.

See footnote at end of table.

TABLE 11.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
26*:											
Camelback	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
Valmar	Poor	Poor	Good	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
Hades	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
27*:											
Camelback Variant	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
Valmar Variant	Very poor.	Very poor.	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
28 Cedarhill	Very poor.	Very poor.	Fair	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.	---
29*:											
Cedarhill	Very poor.	Very poor.	Fair	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.	---
Ireland	Very poor.	Very poor.	Fair	---	Poor	Very poor.	Very poor.	Poor	---	Very poor.	Poor.
Rock outcrop.											
30*:											
Cedarhill	Very poor.	Very poor.	Fair	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.	---
Ririe	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Watercanyon	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
31*:											
Cedarhill	Very poor.	Very poor.	Fair	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.	---
Rock outcrop.											
32*:											
Cedarhill	Poor	Poor	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Camelback	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
Moonlight	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
33*:											
Cedarhill	Poor	Poor	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Hades	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.

See footnote at end of table.

TABLE 11.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
33*:											
Ricrest	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
34*:											
Cedarhill	Very poor.	Very poor.	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
Hondoho	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
Arbone	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
35*:											
Cedarhill	Very poor.	Very poor.	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
Hondoho	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
Ridgecrest	Very poor.	Very poor.	Fair	---	Poor	Very poor.	Very poor.	Poor	---	Very poor.	Poor.
36*:											
Cedarhill	Very poor.	Very poor.	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
Manila	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
37*:											
Cedarhill	Very poor.	Very poor.	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
Trailcreek	Very poor.	Very poor.	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
Coalbank	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
38 Coalbank	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
39*:											
Coalbank	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Trailcreek	Poor	Fair	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
Lonigan	Poor	Poor	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
40*:											
Coalbank	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
Trailcreek	Very poor.	Very poor.	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
Lonigan	Very poor.	Very poor.	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.

See footnote at end of table.

TABLE 11.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
41*:											
Downata	Very poor.	Poor	Good	---	Poor	Good	Good	Poor	---	Good	Fair.
Bear Lake	Very poor.	Poor	Good	---	Poor	Good	Good	Poor	---	Good	Fair.
42*:											
Downey	Good	Good	Good	---	Good	Very poor.	Very poor.	Good	---	Very poor.	Good.
Arimo	Fair	Good	Good	---	Good	Very poor.	Very poor.	Good	---	Very poor.	Good.
43*:											
Downey	Poor	Poor	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
Arimo	Poor	Poor	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
44*:											
Enochville	Very poor.	Poor	Good	---	Good	Good	Good	Poor	---	Good	Good.
Enochville Variant	Very poor.	Poor	Good	---	Good	Good	Good	Poor	---	Good	Good.
45*:											
Greys	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.	---
Pavohroo	Poor	Poor	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.	---
Sedgway	Poor	Poor	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.	---
46 Hades	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
47*:											
Hades	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
Camelback	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
Hondoho	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
48*:											
Hades	Poor	Fair	Good	---	Good	Poor	Very poor.	Fair	---	Very poor.	Good.
Holmes	Very poor.	Very poor.	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
49*:											
Hades	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Lanoak	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.

See footnote at end of table.

TABLE 11.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
50*:											
Hades	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
Lanoak	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Camelback	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
51*:											
Harkness	Very poor.	Very poor.	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.	---
Sedgway	Very poor.	Very poor.	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.	---
Mikesell	Very poor.	Very poor.	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.	---
52 Holmes	Poor	Poor	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
53*:											
Hondoho	Fair	Good	Good	---	Good	Very poor.	Very poor.	Good	---	Very poor.	Good.
Arbone	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
54*:											
Hondoho	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
Arbone	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Ririe	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
55*:											
Hondoho	Poor	Poor	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Hades	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
56*:											
Hondoho	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
Lanoak	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Camelback	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
57 Inkom	Poor	Fair	Good	---	Good	Good	Good	Fair	---	Good	Good.
58 Inkom	Fair	Fair	Good	---	Good	Good	Good	Fair	---	Good	Good.

See footnote at end of table.

TABLE 11.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
59*:											
Ireland	Very poor.	Very poor.	Fair	---	Poor	Very poor.	Very poor.	Poor	---	Very poor.	Poor.
Camelback	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
Rock outcrop.											
60*:											
Ireland	Very poor.	Very poor.	Fair	---	Poor	Very poor.	Very poor.	Poor	---	Very poor.	Poor.
Dateman	Very poor.	Very poor.	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.	---
Pavohroo	Very poor.	Very poor.	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.	---
61*:											
Ireland	Very poor.	Very poor.	Fair	---	Poor	Very poor.	Very poor.	Poor	---	Very poor.	Poor.
Hades	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
Cedarhill	Very poor.	Very poor.	Fair	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.	---
62, 63 Joes	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
64 Joevar	Fair	Fair	Good	---	Good	Poor	Very poor.	Fair	---	Very poor.	Good.
65 Lanoak	Fair	Fair	Good	---	Good	Poor	Very poor.	Fair	---	Very poor.	Good.
66, 67 Lanoak	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
68 Lanoak	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
69*:											
Lanoak	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Camelback	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
70*, 71*:											
Lanoak	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Greys	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.	---
72*:											
Lanoak	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Hades	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.

See footnote at end of table.

TABLE 11.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
73*:											
Lanoak	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Watercanyon	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Rexburg	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
74*:											
Lava flows.											
McCarey	Poor	Poor	Good	---	Fair	Very poor.	Very poor.	Fair	---	Very poor.	Good.
McCarey Variant	Very poor.	Very poor.	Poor	---	Poor	Poor	Very poor.	Very poor.	---	Very poor.	Poor.
75*:											
Manila	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Bancroft	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
76*:											
Manila	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Cedarhill	Very poor.	Very poor.	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
77*:											
McDole	Good	Good	Good	---	Good	Poor	Very poor.	Good	---	Very poor.	Good.
McDole Variant	Good	Good	Good	---	Good	Poor	Very poor.	Good	---	Very poor.	Good.
78 Moonlight	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
79*:											
Moonlight	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
Camelback	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
80*:											
Moonlight	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
Pavohroo	Very poor.	Very poor.	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.	---
81 Oxford	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
82*:											
Oxford	Fair	Fair	Good	---	Good	Poor	Very poor.	Fair	---	Very poor.	Good.

See footnote at end of table.

TABLE 11.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
82*:											
Banida	Fair	Fair	Good	---	Good	Poor	Very poor.	Fair	---	Very poor.	Good.
83*:											
Pavohroo	Very poor.	Very poor.	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.	---
Moonlight	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
84*:											
Pavohroo	Very poor.	Very poor.	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.	---
Sedgway	Very poor.	Very poor.	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.	---
Toponce	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.	---
85*, 86*. Pits											
87 Pocatello	Good	Good	Good	---	Good	Poor	Poor	Good	---	Poor	Good.
88, 89 Pocatello	Fair	Good	Good	---	Good	Very poor.	Very poor.	Good	---	Very poor.	Good.
90, 91 Pocatello	Poor	Poor	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
92*:											
Portino	Poor	Poor	Poor	---	Poor	Poor	Very poor.	Poor	---	Very poor.	Poor.
Thornock	Very poor.	Very poor.	Poor	---	Poor	Very poor.	Very poor.	Very poor.	---	Very poor.	Poor.
93 Rexburg	Fair	Fair	Good	---	Good	Poor	Very poor.	Fair	---	Very poor.	Good.
94, 95 Rexburg	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
96 Rexburg	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
97 Ririe	Fair	Fair	Good	---	Good	Poor	Very poor.	Fair	---	Very poor.	Good.
98, 99 Ririe	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
100*:											
Ririe	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Watercanyon	Fair	Good	Good	---	Good	Very poor.	Very poor.	Good	---	Very poor.	Good.
101*:											
Ririe	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.

See footnote at end of table.

TABLE 11.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
101*: Watercanyon	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
102*: Ririe	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Watercanyon	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
103*: Ririe	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Watercanyon	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Cedarhill	Very poor.	Very poor.	Fair	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.	---
104*. Rock outcrop											
105*: Rubble land.											
Haploxerolls.											
106*: Scout Variant	Very poor.	Very poor.	Good	Fair	Good	Very poor.	Very poor.	Poor	Good	Very poor.	---
Camelback Variant	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
107*: Sedgway	Very poor.	Very poor.	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.	---
Beaverdam	Very poor.	Very poor.	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.	---
108*. Slickens											
109*: Swanner	Very poor.	Very poor.	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
Hondoho	Poor	Poor	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
110*: Swanner	Very poor.	Very poor.	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
Rock outcrop.											
111 Tendoy	Very poor.	Poor	Good	---	Poor	Good	Good	Poor	---	Good	Fair.

See footnote at end of table.

TABLE 11.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
112*:											
Toponce	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.	---
Broadhead	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
113*, 114*: Urban land.											
Bahem	Good	Good	Good	---	Good	Poor	Very poor.	Good	---	Very poor.	Good.
Broxon	Good	Good	Good	---	Good	Poor	Very poor.	Good	---	Very poor.	Good.
115 Valmar	Very poor.	Very poor.	Good	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
116*:											
Valmar	Very poor.	Very poor.	Good	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
Camelback	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
Hades	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
117*:											
Valmar	Very poor.	Very poor.	Good	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
Hades	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
118*:											
Valmar	Very poor.	Very poor.	Good	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
Rock outcrop.											
119*:											
Valmar	Very poor.	Very poor.	Good	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
Watercanyon	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
Hondoho	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
120 Watercanyon	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
121*:											
Watercanyon	Very poor.	Very poor.	Good	---	Good	Very poor.	Very poor.	Poor	---	Very poor.	Good.
Swanner	Very poor.	Very poor.	Fair	---	Fair	Very poor.	Very poor.	Poor	---	Very poor.	Fair.
Rock outcrop.											

See footnote at end of table.

TABLE 11.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
122----------------- Wursten	Fair	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
123*:											
Wursten------------	Poor	Fair	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.
Watercanyon Variant-----------	Poor	Poor	Very poor.	---	Very poor.	Very poor.	Very poor.	Very poor.	---	Very poor.	Very poor.
Hondoho------------	Poor	Poor	Good	---	Good	Very poor.	Very poor.	Fair	---	Very poor.	Good.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 12.--BUILDING SITE DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation]

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1 Arbone	Slight	Slight	Slight	Slight	Moderate: frost action.	Slight.
2 Arbone	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: slope.
3*:						
Arbone	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Hondoho	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
4*:						
Arbone	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: slope.
McCarey	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope, frost action.	Moderate: slope, thin layer.
Lava flows.						
5*:						
Arbone	Slight	Slight	Slight	Moderate: slope.	Moderate: frost action.	Slight.
Rubble land.						
6 Arimo	Severe: cutbanks cave.	Slight	Slight	Slight	Moderate: frost action.	Slight.
7, 8 Bahem	Severe: cutbanks cave.	Slight	Slight	Slight	Moderate: frost action.	Slight.
9 Bancroft	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: low strength, frost action.	Moderate: slope.
10 Bancroft	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope, frost action.	Severe: slope.
11*:						
Bancroft	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope, frost action.	Severe: slope.
Manila	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: low strength, slope, shrink-swell.	Severe: slope.

See footnote at end of table.

TABLE 12.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
12---------------- Banida	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Slight.
13*:						
Bear Lake--------	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding, frost action.	Severe: wetness, flooding.
Bear Lake Variant	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding, frost action.	Severe: wetness, flooding.
14*:						
Broadhead--------	Moderate: too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: low strength, shrink-swell.	Moderate: slope.
Hades------------	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Moderate: low strength, slope, frost action.	Moderate: small stones, slope.
Yago-------------	Severe: large stones.	Severe: shrink-swell, large stones.	Severe: shrink-swell, large stones.	Severe: shrink-swell, slope, large stones.	Severe: low strength, shrink-swell.	Severe: large stones.
15*:						
Broadhead--------	Moderate: too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: low strength, shrink-swell.	Moderate: slope.
Yago-------------	Severe: large stones.	Severe: shrink-swell, large stones.	Severe: shrink-swell, large stones.	Severe: shrink-swell, slope, large stones.	Severe: low strength, shrink-swell.	Severe: large stones.
16*:						
Broadhead--------	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: low strength, slope, shrink-swell.	Severe: slope.
Yago-------------	Severe: large stones, slope.	Severe: shrink-swell, slope, large stones.	Severe: slope, shrink-swell, large stones.	Severe: shrink-swell, slope, large stones.	Severe: low strength, slope, shrink-swell.	Severe: large stones, slope.
17---------------- Broncho	Severe: cutbanks cave, large stones.	Severe: large stones.	Severe: large stones.	Severe: large stones.	Severe: large stones.	Severe: large stones, droughty.
18---------------- Broncho	Severe: cutbanks cave, large stones.	Severe: large stones.	Severe: large stones.	Severe: slope, large stones.	Severe: large stones.	Severe: large stones, droughty.
19*:						
Broncho Variant--	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.

See footnote at end of table.

TABLE 12.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
19*:						
Pocatello	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
20*:						
Broncho Variant	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Ririe	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
Pocatello	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
21, 22 Broxon	Severe: cutbanks cave.	Slight	Slight	Slight	Moderate: frost action.	Slight.
23*:						
Camelback	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: large stones, slope.
Cedarhill	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.
Lanoak	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope, frost action.	Severe: slope.
24*:						
Camelback	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Greys	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope, frost action.	Severe: slope.
25*:						
Camelback	Severe: large stones.	Severe: large stones.	Severe: large stones.	Severe: slope, large stones.	Severe: large stones.	Severe: large stones.
Hades	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Moderate: low strength, slope, frost action.	Moderate: small stones, slope.
26*:						
Camelback	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Valmar	Severe: depth to rock, large stones, slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope.
Hades	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

See footnote at end of table.

TABLE 12.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
27*:						
Camelback Variant	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.
Valmar Variant---	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: large stones, slope.
28---------------- Cedarhill	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.
29*:						
Cedarhill--------	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.
Ireland----------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, large stones, slope.
Rock outcrop.						
30*:						
Cedarhill--------	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.
Ririe------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
Watercanyon------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
31*:						
Cedarhill--------	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.
Rock outcrop.						
32*:						
Cedarhill--------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Camelback--------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Moonlight--------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
33*:						
Cedarhill--------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Hades------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

See footnote at end of table.

TABLE 12.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
33*:						
Ricrest----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
34*:						
Cedarhill--------	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.
Hondoho----------	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope.
Arbone-----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
35*:						
Cedarhill--------	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.
Hondoho----------	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope.
Ridgecrest-------	Severe: depth to rock, large stones, slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: small stones, large stones.
36*:						
Cedarhill--------	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.
Manila-----------	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: low strength, slope, shrink-swell.	Severe: slope.
37*:						
Cedarhill--------	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.
Trailcreek-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
Coalbank---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
38--------------- Coalbank	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: frost action.	Moderate: droughty, slope.
39*, 40*:						
Coalbank---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
Trailcreek-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.

See footnote at end of table.

TABLE 12.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
39*, 40*: Lonigan	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
41*: Downata	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
Bear Lake	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding, frost action.	Severe: wetness, flooding.
42*: Downey	Severe: cutbanks cave.	Slight	Slight	Slight	Moderate: frost action.	Moderate: small stones, droughty.
Arimo	Severe: cutbanks cave.	Slight	Slight	Slight	Moderate: frost action.	Slight.
43*: Downey	Severe: cutbanks cave.	Slight	Slight	Moderate: slope.	Moderate: frost action.	Moderate: small stones, droughty.
Arimo	Severe: cutbanks cave.	Slight	Slight	Moderate: slope.	Moderate: frost action.	Slight.
44*: Enochville	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, flooding, frost action.	Severe: flooding.
Enochville Variant	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, frost action.	Severe: flooding.
45*: Greys	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength, frost action.	Moderate: slope.
Pavohroo	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope, frost action.	Moderate: slope.
Sedgway	Moderate: large stones, slope.	Moderate: shrink-swell, slope, large stones.	Moderate: slope, shrink-swell, large stones.	Severe: slope.	Moderate: slope, frost action, shrink-swell.	Moderate: droughty, slope, small stones.
46 Hades	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Moderate: low strength, slope, frost action.	Moderate: small stones, slope.
47*: Hades	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

See footnote at end of table.

TABLE 12.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
47*:						
Camelback	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Hondoho	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope.
48*:						
Hades	Slight	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: low strength, frost action.	Moderate: small stones.
Holmes	Severe: cutbanks cave, large stones.	Severe: large stones.	Severe: large stones.	Severe: slope, large stones.	Severe: large stones.	Severe: large stones.
49*:						
Hades	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Moderate: low strength, slope, frost action.	Moderate: small stones, slope.
Lanoak	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength, frost action.	Moderate: slope.
50*:						
Hades	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Lanoak	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope, frost action.	Severe: slope.
Camelback	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
51*:						
Harkness	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: low strength, slope, frost action.	Severe: slope.
Sedgway	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Mikesell	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: low strength, slope, shrink-swell.	Severe: slope.
52 Holmes	Severe: cutbanks cave.	Moderate: large stones.	Moderate: large stones.	Moderate: large stones.	Moderate: frost action, large stones.	Moderate: small stones, droughty.
53*:						
Hondoho	Moderate: large stones, slope.	Moderate: slope, large stones.	Moderate: slope, large stones.	Severe: slope.	Moderate: slope, frost action, large stones.	Moderate: small stones, large stones, slope.

See footnote at end of table.

TABLE 12.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
53*:						
Arbone	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: small stones, slope.
54*:						
Hondoho	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope.
Arbone	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Ririe	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
55*:						
Hondoho	Severe: large stones.	Severe: large stones.	Severe: large stones.	Severe: slope, large stones.	Severe: large stones.	Severe: large stones.
Hades	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Moderate: low strength, slope, frost action.	Moderate: small stones, slope.
56*:						
Hondoho	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope.
Lanoak	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope, frost action.	Severe: slope.
Camelback	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
57 Inkom	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding, frost action.	Severe: wetness, flooding.
58 Inkom	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding, frost action.	Moderate: flooding.
59*:						
Ireland	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, large stones, slope.
Camelback	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: large stones, slope.
Rock outcrop.						
60*:						
Ireland	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, large stones, slope.

See footnote at end of table.

TABLE 12.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
60*:						
Dateman	Severe: depth to rock, large stones, slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.
Pavohroo	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
61*:						
Ireland	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, large stones, slope.
Hades	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Cedarhill	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.
62 Joes	Slight	Slight	Slight	Slight	Severe: frost action.	Slight.
63 Joes	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: frost action.	Moderate: slope.
64 Joevar	Moderate: wetness.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: frost action.	Slight.
65 Lanoak	Slight	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength, frost action.	Slight.
66 Lanoak	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength, frost action.	Moderate: slope.
67, 68 Lanoak	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope, frost action.	Severe: slope.
69*:						
Lanoak	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope, frost action.	Severe: slope.
Camelback	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
70*:						
Lanoak	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength, frost action.	Moderate: slope.
Greys	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength, frost action.	Moderate: slope.

See footnote at end of table.

TABLE 12.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
71*:						
Lanoak-----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope, frost action.	Severe: slope.
Greys------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope, frost action.	Severe: slope.
72*:						
Lanoak-----------	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength, frost action.	Moderate: slope.
Hades------------	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Moderate: low strength, slope, frost action.	Moderate: small stones, slope.
73*:						
Lanoak-----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope, frost action.	Severe: slope.
Watercanyon------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
Rexburg----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
74*: Lava flows.						
McCarey----------	Severe: depth to rock.	Moderate: depth to rock.	Severe: depth to rock.	Moderate: slope, depth to rock.	Moderate: depth to rock, frost action.	Moderate: thin layer.
McCarey Variant--	Severe: depth to rock, large stones.	Severe: depth to rock, large stones.	Severe: depth to rock, large stones.	Severe: depth to rock, large stones.	Severe: depth to rock, large stones.	Severe: large stones, thin layer.
75*:						
Manila-----------	Moderate: too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: low strength, shrink-swell.	Moderate: slope.
Bancroft---------	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: low strength, frost action.	Moderate: slope.
76*:						
Manila-----------	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: low strength, slope, shrink-swell.	Severe: slope.
Cedarhill--------	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.

See footnote at end of table.

TABLE 12.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
77*:						
McDole	Slight	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding, frost action.	Slight.
McDole Variant	Moderate: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
78 Moonlight	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
79*:						
Moonlight	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
Camelback	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
80*:						
Moonlight	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
Pavohroo	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
81 Oxford	Moderate: too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: low strength, shrink-swell.	Moderate: slope.
82*:						
Oxford	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Slight.
Banida	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Slight.
83*:						
Pavohroo	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Moonlight	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
84*:						
Pavohroo	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Sedgway	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Toponce	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: low strength, slope, shrink-swell.	Severe: slope.
85*, 86*. Pits						

See footnote at end of table.

TABLE 12.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
87 Pocatello	Slight	Slight	Slight	Slight	Moderate: frost action.	Slight.
88 Pocatello	Slight	Slight	Slight	Moderate: slope.	Moderate: frost action.	Slight.
89 Pocatello	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: slope.
90, 91 Pocatello	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
92*: Portino	Severe: depth to rock.	Moderate: depth to rock.	Severe: depth to rock.	Moderate: depth to rock.	Moderate: depth to rock, frost action.	Moderate: large stones, thin layer.
Thornock	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: thin layer.
93 Rexburg	Slight	Slight	Slight	Slight	Severe: frost action.	Slight.
94 Rexburg	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: frost action.	Moderate: slope.
95, 96 Rexburg	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
97 Ririe	Slight	Slight	Slight	Slight	Severe: frost action.	Slight.
98 Ririe	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: frost action.	Moderate: slope.
99 Ririe	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
100*: Ririe	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: frost action.	Moderate: slope.
Watercanyon	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: frost action.	Moderate: slope.
101*, 102*: Ririe	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
Watercanyon	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
103*: Ririe	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.

See footnote at end of table.

TABLE 12.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
103*:						
Watercanyon------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
Cedarhill--------	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.
104*. Rock outcrop						
105*: Rubble land.						
Haploxerolls.						
106*:						
Scout Variant----	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.
Camelback Variant	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.
107*:						
Sedgway----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Beaverdam--------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope, frost action.	Severe: slope.
108*. Slickens						
109*:						
Swanner----------	Severe: depth to rock, large stones, slope.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: large stones, slope, thin layer.
Hondoho----------	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope.
110*:						
Swanner----------	Severe: depth to rock, large stones, slope.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: large stones, slope, thin layer.
Rock outcrop.						
111-------------- Tendoy	Severe: excess humus, ponding.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: ponding, flooding, frost action.	Severe: ponding, flooding.

See footnote at end of table.

TABLE 12.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
112*:						
Toponce	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: low strength, slope, shrink-swell.	Severe: slope.
Broadhead	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: low strength, slope, shrink-swell.	Severe: slope.
113*:						
Urban land.						
Bahem	Severe: cutbanks cave.	Slight	Slight	Slight	Moderate: frost action.	Slight.
Broxon	Severe: cutbanks cave.	Slight	Slight	Slight	Moderate: frost action.	Slight.
114*:						
Urban land.						
Bahem	Severe: cutbanks cave.	Slight	Slight	Moderate: slope.	Moderate: frost action.	Slight.
Broxon	Severe: cutbanks cave.	Slight	Slight	Moderate: slope.	Moderate: frost action.	Slight.
115 Valmar	Severe: depth to rock, large stones, slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope.
116*:						
Valmar	Severe: depth to rock, large stones, slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope.
Camelback	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Hades	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
117*:						
Valmar	Severe: depth to rock, large stones, slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope.
Hades	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
118*:						
Valmar	Severe: depth to rock, large stones, slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope.
Rock outcrop.						

See footnote at end of table.

TABLE 12.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
119*:						
Valmar-----------	Severe: depth to rock, large stones, slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope.
Watercanyon------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
Hondoho----------	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope.
120--------------- Watercanyon	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
121*:						
Watercanyon------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
Swanner----------	Severe: depth to rock, large stones, slope.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: large stones, slope, thin layer.
Rock outcrop.						
122--------------- Wursten	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: frost action.	Moderate: small stones, large stones.
123*:						
Wursten----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Watercanyon Variant---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
Hondoho----------	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 13.--SANITARY FACILITIES

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "good," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation]

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1 Arbone	Moderate: percs slowly.	Moderate: seepage, slope.	Slight	Slight	Good.
2 Arbone	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
3*:					
Arbone	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Hondoho	Severe: slope.	Severe: slope.	Severe: slope, large stones.	Severe: slope.	Poor: small stones, slope.
4*:					
Arbone	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
McCarey	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: depth to rock.	Poor: area reclaim.
Lava flows.					
5*:					
Arbone	Moderate: percs slowly.	Moderate: seepage, slope.	Slight	Slight	Good.
Rubble land.					
6 Arimo	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy, small stones.
7, 8 Bahem	Moderate: percs slowly.	Severe: seepage.	Slight	Slight	Fair: thin layer.
9 Bancroft	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
10 Bancroft	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
11*:					
Bancroft	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Manila	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.

See footnote at end of table.

TABLE 13.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
12------------------ Banida	Severe: percs slowly.	Slight-----------	Severe: too clayey.	Slight-----------	Poor: too clayey, hard to pack.
13*:					
Bear Lake----------	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Bear Lake Variant--	Severe: flooding, depth to rock, wetness.	Severe: depth to rock, flooding, wetness.	Severe: flooding, depth to rock, wetness.	Severe: flooding, depth to rock, wetness.	Poor: area reclaim, wetness.
14*:					
Broadhead----------	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
Hades--------------	Severe: percs slowly.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, small stones, slope.
Yago---------------	Severe: percs slowly, large stones.	Severe: slope, large stones.	Severe: too clayey, large stones.	Moderate: slope.	Poor: too clayey, hard to pack, large stones.
15*:					
Broadhead----------	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
Yago---------------	Severe: percs slowly, large stones.	Severe: slope, large stones.	Severe: too clayey, large stones.	Moderate: slope.	Poor: too clayey, hard to pack, large stones.
16*:					
Broadhead----------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
Yago---------------	Severe: percs slowly, slope, large stones.	Severe: slope, large stones.	Severe: slope, too clayey, large stones.	Severe: slope.	Poor: too clayey, hard to pack, large stones.
17------------------ Broncho	Severe: poor filter, large stones.	Severe: seepage, large stones.	Severe: too sandy, large stones.	Slight-----------	Poor: seepage, too sandy, small stones.
18------------------ Broncho	Severe: poor filter, large stones.	Severe: seepage, slope, large stones.	Severe: too sandy, large stones.	Moderate: slope.	Poor: seepage, too sandy, small stones.

See footnote at end of table.

TABLE 13.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
19*:					
Broncho Variant	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope, large stones.	Severe: seepage, slope.	Poor: seepage, small stones, slope.
Pocatello	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
20*:					
Broncho Variant	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope, large stones.	Severe: seepage, slope.	Poor: seepage, small stones, slope.
Ririe	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Pocatello	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
21, 22 Broxon	Severe: poor filter.	Severe: seepage.	Severe: too sandy.	Slight	Poor: seepage, too sandy, small stones.
23*:					
Camelback	Severe: slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope.	Poor: small stones, slope.
Cedarhill	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: large stones, slope.
Lanoak	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
24*:					
Camelback	Severe: slope.	Severe: slope.	Severe: slope, large stones.	Severe: slope.	Poor: small stones, slope.
Greys	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
25*:					
Camelback	Severe: large stones.	Severe: slope, large stones.	Severe: large stones.	Moderate: slope.	Poor: small stones.
Hades	Severe: percs slowly.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, small stones, slope.
26*:					
Camelback	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: small stones, slope.

See footnote at end of table.

TABLE 13.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
26*:					
Valmar	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: area reclaim, large stones, slope.
Hades	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
27*:					
Camelback Variant	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: large stones, slope.
Valmar Variant	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: area reclaim, small stones, slope.
28 Cedarhill	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: large stones, slope.
29*:					
Cedarhill	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: large stones, slope.
Ireland	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: area reclaim, small stones, slope.
Rock outcrop.					
30*:					
Cedarhill	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: large stones, slope.
Ririe	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Watercanyon	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
31*:					
Cedarhill	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: large stones, slope.
Rock outcrop.					
32*:					
Cedarhill	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Camelback	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: small stones, slope.
Moonlight	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.

See footnote at end of table.

TABLE 13.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
33*:					
Cedarhill	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Hades	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Ricrest	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
34*:					
Cedarhill	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: large stones, slope.
Hondoho	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: small stones, slope.
Arbone	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
35*:					
Cedarhill	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: large stones, slope.
Hondoho	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: small stones, slope.
Ridgecrest	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: area reclaim, small stones, slope.
36*:					
Cedarhill	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: large stones, slope.
Manila	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
37*:					
Cedarhill	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: large stones, slope.
Trailcreek	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: area reclaim, slope.
Coalbank	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.

See footnote at end of table.

TABLE 13.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
38------------------ Coalbank	Moderate: slope.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: slope.
39*, 40*:					
Coalbank-----------	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.
Trailcreek---------	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: area reclaim, slope.
Lonigan------------	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: area reclaim, small stones, slope.
41*:					
Downata------------	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Bear Lake----------	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
42*, 43*:					
Downey-------------	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy, small stones.
Arimo--------------	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy, small stones.
44*:					
Enochville---------	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Enochville Variant-	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: small stones, wetness.
45*:					
Greys--------------	Severe: percs slowly.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
Pavohroo-----------	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Poor: small stones.
Sedgway------------	Severe: percs slowly.	Severe: slope, large stones.	Severe: large stones.	Moderate: slope.	Poor: large stones.

See footnote at end of table.

TABLE 13.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
46----------------- Hades	Severe: percs slowly.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, small stones, slope.
47*:					
Hades--------------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Camelback----------	Severe: slope.	Severe: slope.	Severe: slope, large stones.	Severe: slope.	Poor: small stones, slope.
Hondoho------------	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: small stones, slope.
48*:					
Hades--------------	Severe: percs slowly.	Slight-----------	Moderate: too clayey.	Slight-----------	Fair: too clayey, small stones.
Holmes-------------	Severe: poor filter, large stones.	Severe: seepage, slope, large stones.	Severe: seepage, large stones.	Severe: seepage.	Poor: seepage, small stones.
49*:					
Hades--------------	Severe: percs slowly.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, small stones, slope.
Lanoak-------------	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
50*:					
Hades--------------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Lanoak-------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Camelback----------	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: small stones, slope.
51*:					
Harkness-----------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
Sedgway------------	Severe: percs slowly, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: large stones, slope.
Mikesell-----------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, small stones.

See footnote at end of table.

TABLE 13.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
52 Holmes	Severe: poor filter.	Severe: seepage.	Severe: seepage, large stones.	Severe: seepage.	Poor: seepage, small stones.
53*:					
Hondoho	Moderate: percs slowly, slope, large stones.	Severe: slope.	Severe: large stones.	Moderate: slope.	Poor: small stones.
Arbone	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: small stones, slope.
54*:					
Hondoho	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: small stones, slope.
Arbone	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Ririe	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
55*:					
Hondoho	Severe: large stone.	Severe: slope, large stones.	Severe: large stone.	Moderate: slope.	Poor: small stones.
Hades	Severe: percs slowly.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, small stones, slope.
56*:					
Hondoho	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: small stones, slope.
Lanoak	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Camelback	Severe: slope.	Severe: slope.	Severe: slope, large stones.	Severe: slope.	Poor: small stones, slope.
57 Inkom	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
58 Inkom	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: wetness.
59*:					
Ireland	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: area reclaim, small stones, slope.
Camelback	Severe: slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope.	Poor: small stones, slope.

See footnote at end of table.

TABLE 13.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
59*: Rock outcrop.					
60*: Ireland	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: area reclaim, small stones, slope.
Dateman	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: area reclaim, large stones, slope.
Pavohroo	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
61*: Ireland	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: area reclaim, small stones, slope.
Hades	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Cedarhill	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: large stones, slope.
62 Joes	Moderate: percs slowly.	Moderate: seepage, slope.	Slight	Slight	Good.
63 Joes	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
64 Joevar	Moderate: flooding, wetness, percs slowly.	Severe: flooding.	Severe: wetness.	Moderate: flooding.	Good.
65 Lanoak	Moderate: percs slowly.	Moderate: seepage, slope.	Slight	Slight	Good.
66 Lanoak	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
67, 68 Lanoak	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
69*: Lanoak	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Camelback	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: small stones, slope.

See footnote at end of table.

TABLE 13.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
70*:					
Lanoak	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
Greys	Severe: percs slowly.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
71*:					
Lanoak	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Greys	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
72*:					
Lanoak	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
Hades	Severe: percs slowly.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, small stones, slope.
73*:					
Lanoak	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Watercanyon	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Rexburg	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
74*:					
Lava flows.					
McCarey	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Poor: area reclaim.
McCarey Variant	Severe: depth to rock, large stones.	Severe: depth to rock, large stones.	Severe: depth to rock, large stones.	Severe: depth to rock.	Poor: area reclaim, large stones.
75*:					
Manila	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
Bancroft	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
76*:					
Manila	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
Cedarhill	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: large stones, slope.

See footnote at end of table.

TABLE 13.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
77*: McDole	Moderate: flooding, percs slowly.	Severe: flooding.	Moderate: flooding.	Moderate: flooding.	Good.
McDole Variant	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Good.
78 Moonlight	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
79*: Moonlight	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Camelback	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: small stones, slope.
80*: Moonlight	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Pavohroo	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
81 Oxford	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
82*: Oxford	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight	Poor: too clayey, hard to pack.
Banida	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight	Poor: too clayey, hard to pack.
83*: Pavohroo	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Moonlight	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
84*: Pavohroo	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Sedgway	Severe: percs slowly, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: large stones, slope.
Toponce	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
85*, 86*. Pits					

See footnote at end of table.

TABLE 13.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
87, 88-------------- Pocatello	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----------	Slight-----------	Good.
89------------------ Pocatello	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
90, 91-------------- Pocatello	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
92*:					
Portino-------------	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Poor: area reclaim.
Thornock------------	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Poor: area reclaim.
93------------------ Rexburg	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----------	Slight-----------	Good.
94------------------ Rexburg	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
95, 96-------------- Rexburg	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
97------------------ Ririe	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----------	Slight-----------	Good.
98------------------ Ririe	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
99------------------ Ririe	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
100*:					
Ririe---------------	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
Watercanyon---------	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
101*, 102*:					
Ririe---------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Watercanyon---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
103*:					
Ririe---------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Watercanyon---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Cedarhill-----------	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: large stones, slope.

See footnote at end of table.

TABLE 13.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
104*. Rock outcrop					
105*: Rubble land.					
Haploxerolls.					
106*: Scout Variant------	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: large stones, slope.
Camelback Variant--	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: large stones, slope.
107*: Sedgway------------	Severe: percs slowly, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: large stones, slope.
Beaverdam----------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, slope.
108*. Slickens					
109*: Swanner------------	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: area reclaim, large stones, slope.
Hondoho------------	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: small stones, slope.
110*: Swanner------------	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: area reclaim, large stones, slope.
Rock outcrop.					
111----------------- Tendoy	Severe: flooding, ponding.	Severe: flooding, excess humus, ponding.	Severe: flooding, ponding, excess humus.	Severe: flooding, ponding.	Poor: ponding, excess humus.
112*: Toponce------------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
Broadhead----------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.

See footnote at end of table.

TABLE 13.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
113*, 114*: Urban land.					
Bahem	Moderate: percs slowly.	Severe: seepage.	Slight	Slight	Fair: thin layer.
Broxon	Severe: poor filter.	Severe: seepage.	Severe: too sandy.	Slight	Poor: seepage, too sandy, small stones.
115 Valmar	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: area reclaim, large stones, slope.
116*: Valmar	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: area reclaim, large stones, slope.
Camelback	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: small stones, slope.
Hades	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
117*: Valmar	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: area reclaim, large stones, slope.
Hades	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
118*: Valmar	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: area reclaim, large stones, slope.
Rock outcrop.					
119*: Valmar	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: area reclaim, large stones, slope.
Watercanyon	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Hondoho	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: small stones, slope.
120 Watercanyon	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.

See footnote at end of table.

TABLE 13.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
121*:					
Watercanyon--------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Swanner------------	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: area reclaim, large stones, slope.
Rock outcrop.					
122----------------- Wursten	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----------	Slight-----------	Poor: small stones.
123*:					
Wursten------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Watercanyon Variant	Severe: slope.	Severe: slope.	Severe: slope, excess salt.	Severe: slope.	Poor: slope, excess salt.
Hondoho------------	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: small stones, slope.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 14.--CONSTRUCTION MATERIALS

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation]

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
1 Arbone	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
2 Arbone	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, slope.
3*:				
Arbone	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Hondoho	Fair: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, area reclaim, slope.
4*:				
Arbone	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, slope.
McCarey	Poor: area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, small stones, thin layer.
Lava flows.				
5*:				
Arbone	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
Rubble land.				
6 Arimo	Good	Improbable: small stones.	Probable	Poor: small stones, area reclaim.
7, 8 Bahem	Good	Probable	Probable	Poor: area reclaim.
9 Bancroft	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
10 Bancroft	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
11*:				
Bancroft	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Manila	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
12 Banida	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.

See footnote at end of table.

TABLE 14.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
13*:				
Bear Lake	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Bear Lake Variant	Poor: area reclaim, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
14*:				
Broadhead	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Hades	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
Yago	Poor: large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim.
15*:				
Broadhead	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Yago	Poor: large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim.
16*:				
Broadhead	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
Yago	Poor: large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
17, 18 Broncho	Poor: large stones.	Improbable: large stones.	Improbable: large stones.	Poor: small stones, area reclaim.
19*:				
Broncho Variant	Poor: slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.
Pocatello	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
20*:				
Broncho Variant	Poor: slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.
Ririe	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Pocatello	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.

See footnote at end of table.

TABLE 14.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
21, 22 Broxon	Good	Probable	Probable	Poor: small stones, area reclaim.
23*:				
Camelback	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Cedarhill	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
Lanoak	Poor: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
24*:				
Camelback	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Greys	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
25*:				
Camelback	Poor: large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, area reclaim.
Hades	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
26*:				
Camelback	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Valmar	Poor: area reclaim, large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, slope.
Hades	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
27*:				
Camelback Variant	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
Valmar Variant	Poor: area reclaim, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, slope.

See footnote at end of table.

TABLE 14.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
28 Cedarhill	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
29*:				
Cedarhill	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
Ireland	Poor: area reclaim, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Rock outcrop.				
30*:				
Cedarhill	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
Ririe	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Watercanyon	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
31*:				
Cedarhill	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
Rock outcrop.				
32*:				
Cedarhill	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Camelback	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Moonlight	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
33*:				
Cedarhill	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Hades	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Ricrest	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.

See footnote at end of table.

TABLE 14.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
34*:				
Cedarhill	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
Hondoho	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, area reclaim, slope.
Arbone	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
35*:				
Cedarhill	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
Hondoho	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, area reclaim, slope.
Ridgecrest	Poor: area reclaim, large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, slope.
36*:				
Cedarhill	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
Manila	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
37*:				
Cedarhill	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
Trailcreek	Poor: area reclaim, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Coalbank	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
38 Coalbank	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
39*:				
Coalbank	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Trailcreek	Poor: area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.

See footnote at end of table.

TABLE 14.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
39*:				
Lonigan	Poor: area reclaim.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, slope.
40*:				
Coalbank	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Trailcreek	Poor: area reclaim, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Lonigan	Poor: area reclaim, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, slope.
41*:				
Downata	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Bear Lake	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
42*, 43*:				
Downey	Good	Improbable: small stones.	Probable	Poor: small stones, area reclaim.
Arimo	Good	Improbable: small stones.	Probable	Poor: small stones, area reclaim.
44*:				
Enochville	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
Enochville Variant	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.
45*:				
Greys	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
Pavohroo	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.
Sedgway	Fair: large stones, shrink-swell.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim.
46 Hades	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
47*:				
Hades	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.

See footnote at end of table.

TABLE 14.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
47*:				
Camelback	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Hondoho	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, area reclaim, slope.
48*:				
Hades	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
Holmes	Poor: large stones.	Probable	Probable	Poor: small stones, area reclaim.
49*:				
Hades	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
Lanoak	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
50*:				
Hades	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Lanoak	Poor: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Camelback	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
51*:				
Harkness	Poor: low strength, slope, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: large stones, area reclaim, slope.
Sedgway	Poor: slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
Mikesell	Poor: low strength, slope, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
52 Holmes	Fair: large stones.	Probable	Probable	Poor: small stones, area reclaim.

See footnote at end of table.

TABLE 14.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
53*:				
Hondoho	Fair: large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, area reclaim.
Arbone	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
54*:				
Hondoho	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, area reclaim, slope.
Arbone	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Ririe	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
55*:				
Hondoho	Poor: large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, area reclaim.
Hades	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
56*:				
Hondoho	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, area reclaim, slope.
Lanoak	Poor: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Camelback	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
57 Inkom	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
58 Inkom	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
59*:				
Ireland	Poor: area reclaim, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Camelback	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Rock outcrop.				

See footnote at end of table.

TABLE 14.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
60*:				
Ireland	Poor: area reclaim, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Dateman	Poor: area reclaim, large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, slope.
Pavohroo	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
61*:				
Ireland	Poor: area reclaim, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Hades	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Cedarhill	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
62 Joes	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
63 Joes	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
64 Joevar	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
65 Lanoak	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
66 Lanoak	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
67 Lanoak	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
68 Lanoak	Poor: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
69*:				
Lanoak	Poor: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Camelback	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
70*:				
Lanoak	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.

See footnote at end of table.

TABLE 14.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
70*:				
Greys	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
71*:				
Lanoak	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Greys	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
72*:				
Lanoak	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
Hades	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
73*:				
Lanoak	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Watercanyon	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Rexburg	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
74*: Lava flows.				
McCarey	Poor: area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, small stones, thin layer.
McCarey Variant	Poor: area reclaim, large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: area reclaim, large stones.
75*:				
Manila	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Bancroft	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
76*:				
Manila	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
Cedarhill	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
77*:				
McDole	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
McDole Variant	Good	Improbable: excess fines.	Improbable: excess fines.	Good.

See footnote at end of table.

TABLE 14.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
78 Moonlight	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
79*:				
Moonlight	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Camelback	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
80*:				
Moonlight	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Pavohroo	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
81 Oxford	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, slope.
82*:				
Oxford	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Banida	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
83*:				
Pavohroo	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Moonlight	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
84*:				
Pavohroo	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Sedgway	Poor: slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
Toponce	Poor: low strength, slope, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
85*, 86*. Pits				
87, 88 Pocatello	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: thin layer.

See footnote at end of table.

TABLE 14.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
89 Pocatello	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: thin layer, slope.
90 Pocatello	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
91 Pocatello	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
92*:				
Portino	Poor: area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, large stones.
Thornock	Poor: area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim, small stones.
93 Rexburg	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
94 Rexburg	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
95 Rexburg	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
96 Rexburg	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
97 Ririe	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
98 Ririe	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
99 Ririe	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
100*:				
Ririe	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
Watercanyon	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
101*:				
Ririe	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Watercanyon	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
102*:				
Ririe	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Watercanyon	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
103*:				
Ririe	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.

See footnote at end of table.

TABLE 14.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
103*:				
Watercanyon	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Cedarhill	Poor: large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
104*. Rock outcrop				
105*: Rubble land.				
Haploxerolls.				
106*:				
Scout Variant	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
Camelback Variant	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
107*:				
Sedgway	Poor: slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
Beaverdam	Poor: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
108*. Slickens				
109*:				
Swanner	Poor: area reclaim, large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: area reclaim, large stones, slope.
Hondoho	Poor: large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, area reclaim, slope.
110*:				
Swanner	Poor: area reclaim, large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: area reclaim, large stones, slope.
Rock outcrop.				
111 Tendoy	Poor: wetness, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.

See footnote at end of table.

TABLE 14.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
112*:				
Toponce	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
Broadhead	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
113*, 114*:				
Urban land.				
Bahem	Good	Probable	Probable	Poor: area reclaim.
Broxon	Good	Probable	Probable	Poor: small stones, area reclaim.
115 Valmar	Poor: area reclaim, large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, slope.
116*:				
Valmar	Poor: area reclaim, large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, slope.
Camelback	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Hades	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
117*:				
Valmar	Poor: area reclaim, large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, slope.
Hades	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
118*:				
Valmar	Poor: area reclaim, large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, slope.
Rock outcrop.				
119*:				
Valmar	Poor: area reclaim, large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, slope.

See footnote at end of table.

TABLE 14.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
119*:				
Watercanyon----------	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Hondoho--------------	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, area reclaim, slope.
120------------------ Watercanyon	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
121*:				
Watercanyon----------	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Swanner--------------	Poor: area reclaim, large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: area reclaim, large stones, slope.
Rock outcrop.				
122------------------ Wursten	Good-----------------	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.
123*:				
Wursten--------------	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Watercanyon Variant--	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
Hondoho--------------	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, area reclaim, slope.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 15.--WATER MANAGEMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation]

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1----------------- Arbone	Moderate: seepage.	Severe: piping.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
2----------------- Arbone	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
3*: Arbone-----------	Severe: slope.	Severe: piping.	Deep to water	Slope----------	Slope----------	Slope.
Hondoho----------	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
4*: Arbone-----------	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
McCarey----------	Severe: slope.	Severe: piping.	Deep to water	Depth to rock, slope, erodes easily.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
Lava flows.						
5*: Arbone-----------	Moderate: seepage, slope.	Severe: piping.	Deep to water	Slope----------	Erodes easily	Erodes easily.
Rubble land.						
6----------------- Arimo	Severe: seepage.	Severe: seepage.	Deep to water	Erodes easily	Erodes easily, too sandy.	Erodes easily.
7----------------- Bahem	Moderate: seepage.	Severe: piping.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
8----------------- Bahem	Moderate: seepage, slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
9, 10------------- Bancroft	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
11*: Bancroft---------	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
Manila-----------	Severe: slope.	Moderate: thin layer, hard to pack.	Deep to water	Percs slowly, slope, erodes easily.	Slope, erodes easily, percs slowly.	Slope, erodes easily, percs slowly.
12---------------- Banida	Slight---------	Moderate: hard to pack.	Deep to water	Percs slowly, erodes easily.	Erodes easily, percs slowly.	Erodes easily, percs slowly.
13*: Bear Lake--------	Slight---------	Severe: piping, wetness.	Flooding, frost action.	Wetness, erodes easily, flooding.	Erodes easily, wetness.	Wetness, erodes easily.

See footnote at end of table.

TABLE 15.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
13*: Bear Lake Variant	Moderate: seepage, depth to rock.	Severe: piping, wetness.	Depth to rock, flooding, frost action.	Wetness, depth to rock, flooding.	Depth to rock, erodes easily, wetness.	Wetness, erodes easily, depth to rock.
14*: Broadhead--------	Severe: slope.	Moderate: hard to pack.	Deep to water	Percs slowly, slope.	Slope, percs slowly.	Slope, percs slowly.
Hades------------	Severe: slope.	Moderate: piping.	Deep to water	Slope----------	Slope----------	Slope.
Yago-------------	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, percs slowly.	Slope, large stones, percs slowly.	Large stones, slope, droughty.
15*, 16*: Broadhead--------	Severe: slope.	Moderate: hard to pack.	Deep to water	Percs slowly, slope.	Slope, percs slowly.	Slope, percs slowly.
Yago-------------	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, percs slowly.	Slope, large stones, percs slowly.	Large stones, slope, droughty.
17---------------- Broncho	Severe: seepage.	Severe: seepage, large stones.	Deep to water	Large stones, droughty, slope.	Large stones, too sandy.	Large stones, droughty.
18---------------- Broncho	Severe: seepage, slope.	Severe: seepage, large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones, too sandy.	Large stones, slope, droughty.
19*: Broncho Variant--	Severe: seepage, slope.	Severe: seepage, large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Pocatello--------	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily, excess salt.	Slope, erodes easily.	Slope, erodes easily.
20*: Broncho Variant--	Severe: seepage, slope.	Severe: seepage, large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Ririe------------	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
Pocatello--------	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily, excess salt.	Slope, erodes easily.	Slope, erodes easily.
21---------------- Broxon	Severe: seepage.	Severe: seepage.	Deep to water	Erodes easily	Large stones, erodes easily, too sandy.	Large stones, erodes easily.
22---------------- Broxon	Severe: seepage.	Severe: seepage.	Deep to water	Slope, erodes easily.	Large stones, erodes easily, too sandy.	Large stones, erodes easily.
23*: Camelback--------	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.

See footnote at end of table.

TABLE 15.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
23*:						
Cedarhill--------	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Lanoak-----------	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
24*:						
Camelback--------	Severe: slope.	Moderate: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Greys------------	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
25*:						
Camelback--------	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Hades------------	Severe: slope.	Moderate: piping.	Deep to water	Slope----------	Slope----------	Slope.
26*:						
Camelback--------	Severe: slope.	Moderate: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Valmar-----------	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Hades------------	Severe: slope.	Moderate: piping.	Deep to water	Slope----------	Slope----------	Slope.
27*:						
Camelback Variant	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Valmar Variant---	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
28---------------- Cedarhill	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
29*:						
Cedarhill--------	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Ireland----------	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop.						
30*:						
Cedarhill--------	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.

See footnote at end of table.

TABLE 15.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
30*:						
Ririe	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
Watercanyon	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
31*:						
Cedarhill	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Rock outcrop.						
32*:						
Cedarhill	Severe: slope.	Severe: seepage.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Camelback	Severe: slope.	Moderate: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Moonlight	Severe: slope.	Severe: piping.	Deep to water	Slope	Slope, erodes easily.	Slope, erodes easily.
33*:						
Cedarhill	Severe: slope.	Severe: seepage.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Hades	Severe: slope.	Moderate: piping.	Deep to water	Slope	Slope	Slope.
Ricrest	Severe: slope.	Severe: piping.	Deep to water	Slope	Slope	Slope.
34*:						
Cedarhill	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Hondoho	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Arbone	Severe: slope.	Severe: piping.	Deep to water	Slope	Slope	Slope.
35*:						
Cedarhill	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Hondoho	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Ridgecrest	Severe: slope.	Severe: seepage, large stones.	Deep to water	Large stones, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.

See footnote at end of table.

TABLE 15.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
36*:						
Cedarhill	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Manila	Severe: slope.	Moderate: thin layer, hard to pack.	Deep to water	Percs slowly, slope, erodes easily.	Slope, erodes easily, percs slowly.	Slope, erodes easily, percs slowly.
37*:						
Cedarhill	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Trailcreek	Severe: seepage, slope.	Severe: piping.	Deep to water	Droughty, soil blowing, depth to rock.	Slope, depth to rock, erodes easily.	Slope, erodes easily, droughty.
Coalbank	Severe: seepage, slope.	Severe: piping.	Deep to water	Droughty, soil blowing, slope.	Slope, erodes easily, soil blowing.	Slope, erodes easily, droughty.
38 Coalbank	Severe: seepage, slope.	Severe: piping.	Deep to water	Droughty, soil blowing, slope.	Slope, erodes easily, soil blowing.	Slope, erodes easily, droughty.
39*, 40*:						
Coalbank	Severe: seepage, slope.	Severe: piping.	Deep to water	Droughty, soil blowing, slope.	Slope, erodes easily, soil blowing.	Slope, erodes easily, droughty.
Trailcreek	Severe: seepage, slope.	Severe: piping.	Deep to water	Droughty, soil blowing, depth to rock.	Slope, depth to rock, erodes easily.	Slope, erodes easily, droughty.
Lonigan	Severe: seepage, slope.	Severe: large stones.	Deep to water	Large stones, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
41*:						
Downata	Moderate: seepage.	Severe: thin layer, wetness.	Flooding, frost action.	Wetness, flooding.	Erodes easily, wetness.	Wetness, erodes easily.
Bear Lake	Slight	Severe: piping, wetness.	Flooding, frost action.	Wetness, erodes easily, flooding.	Erodes easily, wetness.	Wetness, erodes easily.
42*:						
Downey	Severe: seepage.	Severe: seepage.	Deep to water	Droughty, erodes easily.	Large stones, erodes easily, too sandy.	Large stones, erodes easily, droughty.
Arimo	Severe: seepage.	Severe: seepage.	Deep to water	Erodes easily	Erodes easily, too sandy.	Erodes easily.
43*:						
Downey	Severe: seepage.	Severe: seepage.	Deep to water	Droughty, slope, erodes easily.	Large stones, erodes easily, too sandy.	Large stones, erodes easily, droughty.
Arimo	Severe: seepage.	Severe: seepage.	Deep to water	Slope, erodes easily.	Erodes easily, too sandy.	Erodes easily.

See footnote at end of table.

TABLE 15.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
44*:						
Enochville	Slight	Severe: wetness.	Flooding, frost action.	Wetness, flooding.	Erodes easily, wetness.	Wetness, erodes easily.
Enochville Variant	Moderate: seepage.	Severe: seepage, wetness.	Flooding, large stones, frost action.	Wetness, droughty, flooding.	Large stones, wetness.	Large stones, wetness, droughty.
45*:						
Greys	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
Pavohroo	Severe: slope.	Severe: piping.	Deep to water	Slope	Slope, large stones, erodes easily.	Slope, erodes easily.
Sedgway	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones, erodes easily.	Large stones, slope, erodes easily.
46 Hades	Severe: slope.	Moderate: piping.	Deep to water	Slope	Slope	Slope.
47*:						
Hades	Severe: slope.	Moderate: piping.	Deep to water	Slope	Slope	Slope.
Camelback	Severe: slope.	Moderate: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Hondoho	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
48*:						
Hades	Slight	Moderate: piping.	Deep to water	Favorable	Favorable	Favorable.
Holmes	Severe: seepage, slope.	Severe: seepage, large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones, too sandy.	Large stones, slope, droughty.
49*:						
Hades	Severe: slope.	Moderate: piping.	Deep to water	Slope	Slope	Slope.
Lanoak	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
50*:						
Hades	Severe: slope.	Moderate: piping.	Deep to water	Slope	Slope	Slope.
Lanoak	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
Camelback	Severe: slope.	Moderate: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.

See footnote at end of table.

TABLE 15.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
51*:						
Harkness	Severe: slope.	Moderate: hard to pack, large stones.	Deep to water	Large stones, percs slowly, slope.	Slope, large stones, erodes easily.	Large stones, slope, erodes easily.
Sedgway	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones, erodes easily.	Large stones, slope, erodes easily.
Mikesell	Severe: slope.	Moderate: hard to pack, large stones.	Deep to water	Percs slowly, slope, erodes easily.	Slope, large stones, erodes easily.	Large stones, slope, erodes easily.
52 Holmes	Severe: seepage.	Severe: seepage, large stones.	Deep to water	Large stones, droughty.	Large stones, too sandy.	Large stones, droughty.
53*:						
Hondoho	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Arbone	Severe: slope.	Severe: piping.	Deep to water	Slope	Slope	Slope.
54*:						
Hondoho	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Arbone	Severe: slope.	Severe: piping.	Deep to water	Slope	Slope	Slope.
Ririe	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
55*:						
Hondoho	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Hades	Severe: slope.	Moderate: piping.	Deep to water	Slope	Slope	Slope.
56*:						
Hondoho	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Lanoak	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
Camelback	Severe: slope.	Moderate: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
57 Inkom	Moderate: seepage.	Severe: piping, wetness.	Flooding, frost action.	Wetness, erodes easily, flooding.	Erodes easily, wetness.	Wetness, erodes easily.
58 Inkom	Moderate: seepage.	Severe: piping.	Flooding, frost action.	Wetness, erodes easily, flooding.	Erodes easily, wetness.	Erodes easily.

See footnote at end of table.

TABLE 15.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
59*:						
Ireland	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Camelback	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Rock outcrop.						
60*:						
Ireland	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Dateman	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Pavohroo	Severe: slope.	Severe: piping.	Deep to water	Slope	Slope, large stones, erodes easily.	Slope, erodes easily.
61*:						
Ireland	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Hades	Severe: slope.	Moderate: piping.	Deep to water	Slope	Slope	Slope.
Cedarhill	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
62 Joes	Moderate: seepage.	Severe: piping.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
63 Joes	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
64 Joevar	Moderate: seepage.	Severe: piping.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
65 Lanoak	Moderate: seepage.	Severe: piping.	Deep to water	Erodes easily.	Erodes easily	Erodes easily.
66, 67, 68 Lanoak	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
69*:						
Lanoak	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
Camelback	Severe: slope.	Moderate: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
70*, 71*:						
Lanoak	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
Greys	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.

See footnote at end of table.

TABLE 15.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
72*:						
Lanoak	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
Hades	Severe: slope.	Moderate: piping.	Deep to water	Slope	Slope	Slope.
73*:						
Lanoak	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
Watercanyon	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
Rexburg	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
74*:						
Lava flows.						
McCarey	Moderate: seepage, depth to rock, slope.	Severe: piping.	Deep to water	Depth to rock, slope, erodes easily.	Depth to rock, erodes easily.	Erodes easily, depth to rock.
McCarey Variant	Severe: depth to rock.	Severe: piping, large stones.	Deep to water	Large stones, droughty, depth to rock.	Large stones, depth to rock.	Large stones, droughty, depth to rock.
75*:						
Manila	Severe: slope.	Moderate: thin layer, hard to pack.	Deep to water	Percs slowly, slope, erodes easily.	Slope, erodes easily, percs slowly.	Slope, erodes easily, percs slowly.
Bancroft	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
76*:						
Manila	Severe: slope.	Moderate: thin layer, hard to pack.	Deep to water	Percs slowly, slope, erodes easily.	Slope, erodes easily, percs slowly.	Slope, erodes easily, percs slowly.
Cedarhill	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
77*:						
McDole	Moderate: seepage.	Severe: piping.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
McDole Variant	Moderate: seepage.	Severe: piping.	Deep to water, flooding.	Erodes easily, flooding.	Erodes easily	Erodes easily.
78 Moonlight	Severe: slope.	Severe: piping.	Deep to water	Slope	Slope, erodes easily.	Slope, erodes easily.
79*:						
Moonlight	Severe: slope.	Severe: piping.	Deep to water	Slope	Slope, erodes easily.	Slope, erodes easily.
Camelback	Severe: slope.	Moderate: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.

See footnote at end of table.

TABLE 15.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
80*:						
Moonlight	Severe: slope.	Severe: piping.	Deep to water	Slope	Slope, erodes easily.	Slope, erodes easily.
Pavohroo	Severe: slope.	Severe: piping.	Deep to water	Slope	Slope, large stones, erodes easily.	Slope, erodes easily.
81 Oxford	Severe: slope.	Moderate: hard to pack.	Deep to water	Percs slowly, slope.	Slope, erodes easily, percs slowly.	Slope, erodes easily, percs slowly.
82*:						
Oxford	Moderate: slope.	Moderate: hard to pack.	Deep to water	Percs slowly, slope.	Erodes easily, percs slowly.	Erodes easily, percs slowly.
Banida	Moderate: slope.	Moderate: hard to pack.	Deep to water	Percs slowly, slope, erodes easily.	Erodes easily, percs slowly.	Erodes easily, percs slowly.
83*:						
Pavohroo	Severe: slope.	Severe: piping.	Deep to water	Slope	Slope, large stones, erodes easily.	Slope, erodes easily.
Moonlight	Severe: slope.	Severe: piping.	Deep to water	Slope	Slope, erodes easily.	Slope, erodes easily.
84*:						
Pavohroo	Severe: slope.	Severe: piping.	Deep to water	Slope	Slope, large stones, erodes easily.	Slope, erodes easily.
Sedgway	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones, erodes easily.	Large stones, slope, erodes easily.
Toponce	Severe: slope.	Moderate: hard to pack.	Deep to water	Percs slowly, slope, erodes easily.	Slope, erodes easily, percs slowly.	Slope, erodes easily, percs slowly.
85*, 86*. Pits						
87 Pocatello	Moderate: seepage.	Severe: piping.	Deep to water	Erodes easily, excess salt.	Erodes easily	Erodes easily.
88 Pocatello	Moderate: seepage, slope.	Severe: piping.	Deep to water	Slope, erodes easily, excess salt.	Erodes easily	Erodes easily.
89, 90, 91 Pocatello	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily, excess salt.	Slope, erodes easily.	Slope, erodes easily.
92*:						
Portino	Moderate: seepage, depth to rock.	Severe: piping.	Deep to water	Depth to rock, erodes easily.	Depth to rock, erodes easily.	Erodes easily, depth to rock.
Thornock	Severe: depth to rock.	Severe: piping.	Deep to water	Depth to rock	Depth to rock, erodes easily.	Erodes easily, depth to rock.
93 Rexburg	Moderate: seepage.	Severe: piping.	Deep to water	Erodes easily	Erodes easily	Erodes easily.

See footnote at end of table.

TABLE 15.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
94, 95, 96-------- Rexburg	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
97---------------- Ririe	Moderate: seepage.	Severe: piping.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
98, 99------------ Ririe	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
100*, 101*, 102*:						
Ririe------------	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
Watercanyon------	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
103*:						
Ririe------------	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
Watercanyon------	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
Cedarhill--------	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
104*. Rock outcrop						
105*: Rubble land.						
Haploxerolls.						
106*:						
Scout Variant----	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Camelback Variant	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
107*:						
Sedgway----------	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones, erodes easily.	Large stones, slope, erodes easily.
Beaverdam--------	Severe: slope.	Slight---------	Deep to water	Percs slowly, slope, erodes easily.	Slope, erodes easily, percs slowly.	Slope, erodes easily, percs slowly.
108*. Slickens						
109*:						
Swanner----------	Severe: depth to rock, slope.	Severe: large stones.	Deep to water	Large stones, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Hondoho----------	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.

See footnote at end of table.

TABLE 15.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
110*:						
Swanner----------	Severe: depth to rock, slope.	Severe: large stones.	Deep to water	Large stones, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop.						
111--------------- Tendoy	Moderate: seepage.	Severe: excess humus, ponding.	Ponding, flooding, subsides.	Ponding, erodes easily, flooding.	Erodes easily, ponding.	Wetness, erodes easily.
112*:						
Toponce----------	Severe: slope.	Moderate: hard to pack.	Deep to water	Percs slowly, slope, erodes easily.	Slope, erodes easily, percs slowly.	Slope, erodes easily, percs slowly.
Broadhead--------	Severe: slope.	Moderate: hard to pack.	Deep to water	Percs slowly, slope.	Slope, percs slowly.	Slope, percs slowly.
113*:						
Urban land.						
Bahem------------	Moderate: seepage.	Severe: piping.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
Broxon-----------	Severe: seepage.	Severe: seepage.	Deep to water	Erodes easily	Large stones, erodes easily, too sandy.	Large stones, erodes easily.
114*:						
Urban land.						
Bahem------------	Moderate: seepage, slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
Broxon-----------	Severe: seepage.	Severe: seepage.	Deep to water	Slope, erodes easily.	Large stones, erodes easily, too sandy.	Large stones, erodes easily.
115--------------- Valmar	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
116*:						
Valmar-----------	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Camelback--------	Severe: slope.	Moderate: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Hades------------	Severe: slope.	Moderate: piping.	Deep to water	Slope----------	Slope----------	Slope.
117*:						
Valmar-----------	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Hades------------	Severe: slope.	Moderate: piping.	Deep to water	Slope----------	Slope----------	Slope.

See footnote at end of table.

TABLE 15.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
118*:						
Valmar-----------	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop.						
119*:						
Valmar-----------	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Watercanyon------	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
Hondoho----------	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
120--------------- Watercanyon	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
121*:						
Watercanyon------	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
Swanner----------	Severe: depth to rock, slope.	Severe: large stones.	Deep to water	Large stones, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop.						
122--------------- Wursten	Moderate: seepage.	Severe: piping.	Deep to water	Favorable------	Favorable------	Favorable.
123*:						
Wursten----------	Severe: slope.	Severe: piping.	Deep to water	Slope----------	Slope----------	Slope.
Watercanyon Variant---------	Severe: slope.	Severe: piping, excess salt.	Deep to water	Droughty, slope, erodes easily.	Slope, erodes easily.	Slope, excess salt, erodes easily.
Hondoho----------	Severe: slope.	Severe: large stones.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 16.--ENGINEERING INDEX PROPERTIES

[The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated]

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
1, 2------------- Arbone	0-9	Silt loam--------	ML	A-4	0-5	90-100	90-100	80-90	55-75	20-35	NP-10
	9-60	Loam, silt loam	ML	A-4	0-5	90-100	85-100	80-90	55-75	20-35	NP-10
3*: Arbone----------	0-9	Gravelly silt loam.	ML	A-4	0-5	75-80	70-75	60-70	50-60	20-35	NP-10
	9-60	Gravelly silt loam.	ML, GM	A-4	0-5	60-80	55-75	50-70	40-60	20-35	NP-10
Hondoho---------	0-15	Gravelly silt loam.	ML, CL-ML	A-4	0-10	75-85	65-75	60-75	50-65	25-35	5-10
	15-60	Very gravelly loam, very cobbly loam, very gravelly silt loam.	GM, GM-GC	A-2, A-1	5-45	35-55	35-50	30-45	20-35	25-35	5-10
4*: Arbone----------	0-9	Silt loam--------	ML	A-4	0-5	90-100	90-100	80-90	55-75	20-35	NP-10
	9-60	Loam, silt loam	ML	A-4	0-5	90-100	85-100	80-90	55-75	20-35	NP-10
McCarey---------	0-12	Silt loam--------	ML	A-4	0-5	95-100	90-100	85-100	60-90	20-35	NP-10
	12-17	Clay loam, silty clay loam, silt loam.	CL, CL-ML	A-6, A-4	0-5	85-100	85-100	80-100	65-85	25-40	5-15
	17-28	Silt loam, loam	ML	A-4	0-5	85-100	85-100	80-100	65-85	20-35	NP-10
	28	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Lava flows.											
5*: Arbone----------	0-9	Silt loam--------	ML	A-4	0-5	90-100	90-100	80-90	55-75	20-35	NP-10
	9-60	Loam, silt loam	ML	A-4	0-5	90-100	85-100	80-90	55-75	20-35	NP-10
Rubble land.											
6---------------- Arimo	0-18	Silt loam--------	ML, CL-ML	A-4	0-5	80-95	75-90	70-85	65-80	20-30	NP-10
	18-33	Silt loam--------	ML, CL-ML	A-4	0-5	80-95	75-90	70-85	65-80	20-30	NP-10
	33-60	Extremely gravelly coarse sand.	GP	A-1	5-25	20-30	10-20	0-10	0-5	---	NP
7, 8------------- Bahem	0-11	Silt loam--------	ML, CL-ML	A-4	0	95-100	95-100	95-100	85-95	20-30	NP-10
	11-49	Silt loam, silt	ML, CL-ML	A-4	0	95-100	95-100	95-100	90-95	20-30	NP-10
	49-60	Extremely cobbly sand, extremely stony sand.	GP, GP-GM	A-1	50-60	40-60	20-40	5-10	0-5	---	NP
9, 10------------ Bancroft	0-7	Silt loam--------	ML, CL-ML	A-4	0	100	100	100	95-100	20-30	NP-10
	7-37	Silt loam, silty clay loam.	CL	A-6	0	100	100	100	95-100	30-40	10-20
	37-60	Silt loam--------	ML, CL-ML	A-4	0	100	100	100	95-100	20-30	NP-10
11*: Bancroft--------	0-7	Silt loam--------	ML, CL-ML	A-4	0	100	100	100	95-100	20-30	NP-10
	7-37	Silt loam, silty clay loam.	CL	A-6	0	100	100	100	95-100	30-40	10-20
	37-60	Silt loam--------	ML, CL-ML	A-4	0	100	100	100	95-100	20-30	NP-10

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
11*: Manila----------	0-7	Silt loam--------	CL-ML, CL	A-4, A-6	0	95-100	90-100	85-95	70-90	25-35	5-15
	7-48	Clay, silty clay, silty clay loam.	CL, CH	A-7	0-5	100	95-100	85-100	75-90	40-60	20-35
	48-60	Silt loam, loam	ML, CL-ML	A-4	0-5	95-100	95-100	85-95	75-90	20-30	NP-10
12--------------- Banida	0-6	Silty clay loam	CL	A-6, A-7	0	100	95-100	90-100	80-95	30-45	10-20
	6-64	Silty clay, clay	CH, CL	A-7	0	100	100	95-100	90-100	40-60	20-40
13*: Bear Lake-------	0-12	Silt loam--------	CL-ML, ML	A-4	0	100	95-100	90-100	80-90	25-35	5-10
	12-60	Silty clay loam, silt loam.	CL-ML, CL	A-4, A-6	0	100	95-100	95-100	80-90	25-35	5-15
Bear Lake Variant--------	0-5	Silt loam--------	CL-ML, CL	A-4, A-6	0	95-100	90-100	85-95	80-90	20-30	5-15
	5-17	Silt loam, silty clay loam.	CL	A-6	0	95-100	95-100	90-100	85-95	25-35	10-20
	17-36	Silt loam--------	CL-ML, CL	A-4, A-6	0	95-100	95-100	90-100	80-90	20-30	5-15
	36	Weathered bedrock	---	---	---	---	---	---	---	---	---
14*: Broadhead-------	0-2	Silt loam--------	ML, CL-ML	A-4	0-5	95-100	90-100	85-95	80-90	25-35	5-10
	2-9	Silty clay loam, silt loam.	CL	A-6	0-5	95-100	90-100	85-95	80-90	30-40	10-15
	9-60	Silty clay loam, silty clay.	CL, CH	A-7	0-5	95-100	85-95	80-90	75-85	40-55	15-30
Hades-----------	0-7	Gravelly silt loam.	CL-ML	A-4	0-5	65-80	60-75	55-75	50-60	20-30	5-10
	7-60	Gravelly silt loam, gravelly silty clay loam.	CL, GC	A-6	0-10	60-85	60-80	55-80	45-75	25-40	10-20
Yago------------	0-10	Extremely stony silty clay loam.	CL	A-6	40-65	70-85	65-80	60-75	55-70	30-40	10-20
	10-45	Very stony clay loam, very stony silty clay loam, very stony clay.	CL, CH, GC	A-7	50-65	60-75	55-70	50-65	45-60	40-55	20-35
	45-60	Very stony silt loam, very stony silty clay loam.	CL, GC	A-6	50-65	60-75	55-70	50-70	45-65	25-40	10-20
15*, 16*: Broadhead-------	0-2	Silt loam--------	ML, CL-ML	A-4	0-5	95-100	90-100	85-95	80-90	25-35	5-10
	2-9	Silty clay loam, silt loam.	CL	A-6	0-5	95-100	90-100	85-95	80-90	30-40	10-15
	9-60	Silty clay loam, silty clay.	CL, CH	A-7	0-5	95-100	85-95	80-90	75-85	40-55	15-30
Yago------------	0-10	Extremely stony silty clay loam.	CL	A-6	40-65	70-85	65-80	60-75	55-70	30-40	10-20
	10-45	Very stony clay loam, very stony silty clay loam, very stony clay.	CL, CH, GC	A-7	50-65	60-75	55-70	50-65	45-60	40-55	20-35
	45-60	Very stony silt loam, very stony silty clay loam.	CL, GC	A-6	50-65	60-75	55-70	50-70	45-65	25-40	10-20

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
17---------------- Broncho	0-6	Cobbly loam------	ML, CL-ML, SM, SM-SC	A-4	15-40	85-95	80-90	65-75	45-55	20-30	NP-10
	6-13	Very stony loam, cobbly loam.	CL-ML, ML, GM, GM-GC	A-4	25-40	60-95	50-90	45-80	35-65	20-30	NP-10
	13-60	Extremely cobbly coarse sand, extremely stony coarse sand.	SP, GP	A-1	45-65	30-75	15-40	5-20	0-5	---	NP
18---------------- Broncho	0-6	Extremely stony loam.	SM, SM-SC, GM, GM-GC	A-4	30-50	70-85	65-80	55-70	40-50	20-30	NP-10
	6-13	Very stony loam, cobbly loam.	CL-ML, ML, GM, GM-GC	A-4	25-40	60-95	50-90	45-80	35-65	20-30	NP-10
	13-60	Extremely cobbly coarse sand, extremely stony coarse sand.	SP, GP	A-1	45-65	30-75	15-40	5-20	0-5	---	NP
19*:											
Broncho Variant-	0-4	Very gravelly loam.	GM, GM-GC	A-2, A-4	10-15	50-65	45-60	40-55	30-40	20-30	NP-10
	4-28	Extremely gravelly loam, extremely gravelly clay loam, very gravelly loam.	GC, GM-GC	A-1, A-2	25-40	35-60	30-55	30-50	20-35	25-35	5-15
	28-60	Extremely gravelly sandy loam, extremely cobbly sandy loam.	GM, GP-GM	A-1	30-45	25-45	20-40	15-35	10-20	20-25	NP-5
Pocatello--------	0-8	Silt loam--------	ML	A-4	0	100	100	95-100	80-95	25-35	NP-10
	8-40	Silt loam--------	ML	A-4	0	100	100	95-100	80-95	25-35	NP-10
	40-60	Silt loam, silt	ML	A-4	0	100	100	95-100	80-95	25-35	NP-10
20*:											
Broncho Variant-	0-4	Very gravelly loam.	GM, GM-GC	A-2, A-4	10-15	50-65	45-60	40-55	30-40	20-30	NP-10
	4-28	Extremely gravelly loam, extremely gravelly clay loam, very gravelly loam.	GC, GM-GC	A-1, A-2	25-40	35-60	30-55	30-50	20-35	25-35	5-15
	28-60	Extremely gravelly sandy loam, extremely cobbly sandy loam.	GM, GP-GM	A-1	30-45	25-45	20-40	15-35	10-20	20-25	NP-5
Ririe------------	0-12	Silt loam--------	ML, CL-ML	A-4	0	95-100	95-100	95-100	75-90	20-30	NP-10
	12-60	Silt loam--------	ML, CL-ML	A-4	0	95-100	95-100	95-100	75-90	20-30	NP-10
Pocatello--------	0-8	Silt loam--------	ML	A-4	0	100	100	95-100	80-95	25-35	NP-10
	8-40	Silt loam--------	ML	A-4	0	100	100	95-100	80-95	25-35	NP-10
	40-60	Silt loam, silt	ML	A-4	0	100	100	95-100	80-95	25-35	NP-10
21, 22------------ Broxon	0-8	Silt loam--------	ML, CL-ML	A-4	0	95-100	95-100	95-100	85-95	20-30	NP-10
	8-25	Silt loam, silt	ML, CL-ML	A-4	0	95-100	95-100	95-100	90-95	20-30	NP-10
	25-60	Extremely stony sand, extremely cobbly sand.	GP, SP	A-1	50-60	40-60	20-40	5-10	0-5	---	NP

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
23*:											
Camelback	0-21	Very cobbly silt loam.	GM-GC, GM, SM, ML	A-4	30-40	55-75	50-70	45-65	35-60	20-30	NP-10
	21-42	Extremely gravelly silt loam, extremely cobbly silt loam.	GM-GC, GC	A-2, A-1	15-55	25-50	20-45	20-40	15-35	25-35	5-15
	42	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Cedarhill	0-9	Very cobbly silt loam.	GM, GM-GC	A-4	40-50	60-75	55-70	50-65	40-50	15-25	NP-10
	9-28	Very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4	40-65	55-75	50-70	45-65	35-50	20-30	NP-10
	28-60	Very cobbly loam, very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4, A-2	40-65	55-65	50-60	45-55	30-45	15-25	NP-10
Lanoak	0-22	Silt loam	ML	A-4	0	100	100	95-100	90-100	20-25	NP-5
	22-60	Silt loam	CL, CL-ML	A-6, A-4	0	100	100	95-100	90-100	25-35	5-15
24*:											
Camelback	0-21	Gravelly silt loam.	GM-GC, GM	A-4	0-5	55-70	50-65	45-60	35-50	20-30	NP-10
	21-60	Extremely gravelly silt loam, extremely cobbly silt loam.	GM-GC, GC	A-2, A-1	15-55	25-50	20-45	20-40	15-35	25-35	5-15
Greys	0-19	Silt loam	ML, CL-ML	A-4	0	100	100	100	90-100	15-30	NP-10
	19-60	Silt loam, silty clay loam.	CL-ML, CL	A-4, A-6	0	100	100	100	90-100	25-35	5-15
25*:											
Camelback	0-21	Extremely stony silt loam.	ML, CL-ML	A-4	40-55	90-95	70-80	65-75	55-65	20-30	NP-10
	21-60	Extremely gravelly silt loam, extremely cobbly silt loam.	GM-GC, GC	A-2, A-1	15-55	25-50	20-45	20-40	15-35	25-35	5-15
Hades	0-7	Gravelly silt loam.	CL-ML	A-4	0-5	65-80	60-75	55-75	50-60	20-30	5-10
	7-60	Gravelly silt loam, gravelly silty clay loam.	CL, GC	A-6	0-10	60-85	60-80	55-80	45-75	25-40	10-20
26*:											
Camelback	0-21	Gravelly silt loam.	GM-GC, GM	A-4	0-5	55-70	50-65	45-60	35-50	20-30	NP-10
	21-42	Extremely gravelly silt loam, extremely cobbly silt loam.	GM-GC, GC	A-2, A-1	15-55	25-50	20-45	20-40	15-35	25-35	5-15
	42	Unweathered bedrock.	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
26*:											
Valmar----------	0-9	Very cobbly silt loam.	GM, GM-GC	A-4	30-45	55-75	50-70	45-65	40-50	20-30	NP-10
	9-14	Very stony silt loam, very cobbly silt loam.	GM-GC, GC	A-4, A-6	30-45	55-75	50-70	50-65	40-50	25-35	5-15
	14-24	Extremely stony silt loam, extremely flaggy silt loam.	GM-GC, GC	A-4, A-6, A-2	70-85	35-70	30-65	30-55	25-50	25-35	5-15
	24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Hades-----------	0-7	Gravelly silt loam.	CL-ML	A-4	0-5	65-80	60-75	55-75	50-60	20-30	5-10
	7-60	Gravelly silt loam, gravelly silty clay loam.	CL, GC	A-6	0-10	60-85	60-80	55-80	45-75	25-40	10-20
27*:											
Camelback Variant--------	0-10	Gravelly silt loam.	ML, CL-ML, GM, GM-GC	A-4	5-10	65-75	60-70	55-65	45-55	20-30	NP-10
	10-60	Very cobbly loam, extremely cobbly loam.	GM, GM-GC, GC	A-2	30-70	45-55	40-50	35-45	25-35	20-35	NP-15
Valmar Variant--	0-9	Very stony silt loam.	ML, CL-ML	A-4	20-35	70-85	65-80	60-75	55-65	20-30	NP-10
	9-24	Very stony loam, extremely stony loam.	GC, GM-GC	A-2, A-1	45-55	40-55	35-50	30-45	20-35	20-30	5-10
	24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
28-------------- Cedarhill	0-9	Very cobbly silt loam.	GM, GM-GC	A-4	40-50	60-75	55-70	50-65	40-50	15-25	NP-10
	9-28	Very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4	40-65	55-75	50-70	45-65	35-50	20-30	NP-10
	28-60	Very cobbly loam, very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4, A-2	40-65	55-65	50-60	45-55	30-45	15-25	NP-10
29*:											
Cedarhill-------	0-9	Very cobbly silt loam.	GM, GM-GC	A-4	40-50	60-75	55-70	50-65	40-50	15-25	NP-10
	9-28	Very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4	40-65	55-75	50-70	45-65	35-50	20-30	NP-10
	28-60	Very cobbly loam, very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4, A-2	40-65	55-65	50-60	45-55	30-45	15-25	NP-10

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
29*:											
Ireland---------	0-7	Extremely stony silt loam.	GM	A-2, A-4	40-50	45-70	40-65	35-55	30-50	20-25	NP-5
	7-30	Very stony silt loam, extremely stony silt loam.	GM-GC, GW-GC	A-1, A-2	40-50	20-55	15-50	15-40	10-35	25-30	5-10
	30	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Rock outcrop.											
30*:											
Cedarhill-------	0-9	Very cobbly silt loam.	GM, GM-GC	A-4	40-50	60-75	55-70	50-65	40-50	15-25	NP-10
	9-28	Very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4	40-65	55-75	50-70	45-65	35-50	20-30	NP-10
	28-60	Very cobbly loam, very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4, A-2	40-65	55-65	50-60	45-55	30-45	15-25	NP-10
Ririe-----------	0-12	Silt loam--------	ML, CL-ML	A-4	0	95-100	95-100	95-100	75-90	20-30	NP-10
	12-60	Silt loam--------	ML, CL-ML	A-4	0	95-100	95-100	95-100	75-90	20-30	NP-10
Watercanyon-----	0-7	Silt loam--------	CL-ML, ML	A-4	0	100	100	95-100	90-100	15-30	NP-10
	7-16	Silt loam--------	CL-ML, ML	A-4	0	100	100	95-100	90-100	15-30	NP-10
	16-60	Silt loam, very fine sandy loam, silt.	ML	A-4	0	100	100	95-100	75-100	15-25	NP-5
31*:											
Cedarhill-------	0-9	Very cobbly silt loam.	GM, GM-GC	A-4	40-50	60-75	55-70	50-65	40-50	15-25	NP-10
	9-28	Very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4	40-65	55-75	50-70	45-65	35-50	20-30	NP-10
	28-60	Very cobbly loam, very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4, A-2	40-65	55-65	50-60	45-55	30-45	15-25	NP-10
Rock outcrop.											
32*:											
Cedarhill-------	0-9	Very gravelly silt loam.	GM, GM-GC	A-2, A-4	0-20	40-60	35-50	30-45	25-40	15-25	NP-10
	9-28	Extremely gravelly silt loam, very gravelly silt loam.	GM, GM-GC	A-2, A-4	10-30	35-60	30-50	25-45	20-40	15-25	NP-10
	28-60	Extremely gravelly silt loam, extremely gravelly loam, very gravelly silt loam.	GM, GM-GC	A-1, A-2	15-30	30-55	25-45	20-40	15-30	15-25	NP-10

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
32*:											
Camelback	0-21	Gravelly silt loam.	GM-GC, GM	A-4	0-5	55-70	50-65	45-60	35-50	20-30	NP-10
	21-42	Extremely gravelly silt loam, extremely cobbly silt loam.	GM-GC, GC	A-2, A-1	15-55	25-50	20-45	20-40	15-35	25-35	5-15
	42	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Moonlight	0-24	Silt loam	ML, CL-ML	A-4	0	80-95	75-90	70-85	65-80	20-30	NP-10
	24-60	Silt loam	ML, CL-ML	A-4	0	80-95	75-90	70-85	65-80	20-30	NP-10
33*:											
Cedarhill	0-9	Very gravelly silt loam.	GM, GM-GC	A-2, A-4	0-20	40-60	35-50	30-45	25-40	15-25	NP-10
	9-28	Extremely gravelly silt loam, very gravelly silt loam.	GM, GM-GC	A-2, A-4	10-30	35-60	30-50	25-45	20-40	15-25	NP-10
	28-60	Extremely gravelly silt loam, extremely gravelly loam, very gravelly silt loam.	GM, GM-GC	A-1, A-2	15-30	30-55	25-45	20-40	15-30	15-25	NP-10
Hades	0-7	Gravelly silt loam.	CL-ML	A-4	0-5	65-80	60-75	55-75	50-60	20-30	5-10
	7-60	Gravelly silt loam, gravelly silty clay loam.	CL, GC	A-6	0-10	60-85	60-80	55-80	45-75	25-40	10-20
Ricrest	0-10	Gravelly silt loam.	ML, CL-ML	A-4	0-5	80-100	70-95	70-90	55-70	15-25	NP-10
	10-24	Clay loam, silt loam, gravelly silt loam.	CL, CL-ML	A-4, A-6	0-5	75-100	70-95	70-95	60-75	25-35	5-15
	24-60	Gravelly loam, gravelly clay loam, gravelly silt loam.	CL, CL-ML, GC, GM-GC	A-4, A-2, A-6	0-10	50-80	50-75	45-70	30-60	25-35	5-15
34*:											
Cedarhill	0-9	Very cobbly silt loam.	GM, GM-GC	A-4	40-50	60-75	55-70	50-65	40-50	15-25	NP-10
	9-28	Very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4	40-65	55-75	50-70	45-65	35-50	20-30	NP-10
	28-60	Very cobbly loam, very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4, A-2	40-65	55-65	50-60	45-55	30-45	15-25	NP-10
Hondoho	0-15	Cobbly silt loam	CL-ML, ML	A-4	25-40	70-90	70-85	55-80	50-70	25-35	5-10
	15-60	Very cobbly sandy clay loam, very cobbly loam, extremely cobbly loam.	GC, GM	A-2, A-1	45-60	20-50	15-45	15-35	5-20	30-40	5-15

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
34*:											
Arbone----------	0-9	Gravelly silt loam.	ML	A-4	0-5	75-80	70-75	60-70	50-60	20-35	NP-10
	9-60	Gravelly silt loam.	ML, GM	A-4	0-5	60-80	55-75	50-70	40-60	20-35	NP-10
35*:											
Cedarhill-------	0-9	Very cobbly silt loam.	GM, GM-GC	A-4	40-50	60-75	55-70	50-65	40-50	15-25	NP-10
	9-28	Very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4	40-65	55-75	50-70	45-65	35-50	20-30	NP-10
	28-60	Very cobbly loam, very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4, A-2	40-65	55-65	50-60	45-55	30-45	15-25	NP-10
Hondoho---------	0-15	Cobbly silt loam	CL-ML, ML	A-4	25-40	70-90	70-85	55-80	50-70	25-35	5-10
	15-60	Very cobbly sandy clay loam, very cobbly loam, extremely cobbly loam.	GC, GM	A-2, A-1	45-60	20-50	15-45	15-35	5-20	30-40	5-15
Ridgecrest------	0-14	Extremely stony silt loam.	GM	A-2	40-55	40-50	35-45	30-40	25-35	20-25	NP-5
	14-27	Extremely stony loam, extremely stony silt loam.	GM	A-1	50-65	30-40	25-30	20-30	15-25	20-30	NP-5
	27	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
36*:											
Cedarhill-------	0-9	Very cobbly silt loam.	GM, GM-GC	A-4	40-50	60-75	55-70	50-65	40-50	15-25	NP-10
	9-28	Very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4	40-65	55-75	50-70	45-65	35-50	20-30	NP-10
	28-60	Very cobbly loam, very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4, A-2	40-65	55-65	50-60	45-55	30-45	15-25	NP-10
Manila----------	0-7	Silt loam--------	CL-ML, CL	A-4, A-6	0	95-100	90-100	85-95	70-90	25-35	5-15
	7-48	Clay, silty clay, silty clay loam.	CL, CH	A-7	0-5	100	95-100	85-100	75-90	40-60	20-35
	48-60	Silt loam, loam	ML, CL-ML	A-4	0-5	95-100	95-100	85-95	75-90	20-30	NP-10
37*:											
Cedarhill-------	0-9	Very cobbly silt loam.	GM, GM-GC	A-4	40-50	60-75	55-70	50-65	40-50	15-25	NP-10
	9-28	Very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4	40-65	55-75	50-70	45-65	35-50	20-30	NP-10
	28-60	Very cobbly loam, very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4, A-2	40-65	55-65	50-60	45-55	30-45	15-25	NP-10

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
37*:											
Trailcreek------	0-4	Very fine sandy loam.	ML	A-4	0	95-100	95-100	90-100	55-65	15-20	NP-5
	4-26	Very fine sandy loam.	ML	A-4	0	95-100	95-100	90-100	50-60	15-20	NP-5
	26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Coalbank--------	0-33	Very fine sandy loam.	ML	A-4	0	95-100	95-100	90-100	55-65	15-20	NP-5
	33-60	Very fine sandy loam, fine sandy loam.	ML	A-4	0	95-100	95-100	90-100	50-60	15-20	NP-5
38--------------- Coalbank	0-33	Very fine sandy loam.	ML	A-4	0	95-100	95-100	90-100	55-65	15-20	NP-5
	33-60	Very fine sandy loam, fine sandy loam.	ML	A-4	0	95-100	95-100	90-100	50-60	15-20	NP-5
39*, 40*:											
Coalbank--------	0-33	Very fine sandy loam.	ML	A-4	0	95-100	95-100	90-100	55-65	15-20	NP-5
	33-60	Very fine sandy loam, fine sandy loam.	ML	A-4	0	95-100	95-100	90-100	50-60	15-20	NP-5
Trailcreek------	0-4	Very fine sandy loam.	ML	A-4	0	95-100	95-100	90-100	55-65	15-20	NP-5
	4-26	Very fine sandy loam.	ML	A-4	0	95-100	95-100	90-100	50-60	15-20	NP-5
	26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Lonigan---------	0-7	Cobbly silt loam	ML	A-4	15-30	75-95	70-90	65-85	50-65	15-20	NP-5
	7-12	Very cobbly silt loam.	GM	A-4	30-45	60-75	55-70	50-65	35-50	15-20	NP-5
	12-27	Very cobbly loam, extremely cobbly loam.	GM	A-2	40-55	40-55	35-50	30-50	25-35	15-20	NP-5
	27	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
41*:											
Downata---------	0-14	Silt loam--------	ML, CL-ML	A-4	0	100	95-100	95-100	80-90	20-30	NP-10
	14-40	Silty clay loam	CL	A-6	0	100	95-100	95-100	85-95	30-40	10-20
	40-60	Silt loam--------	CL-ML	A-4	0	100	95-100	95-100	80-90	25-30	5-10
Bear Lake-------	0-12	Silt loam--------	CL-ML, ML	A-4	0	100	95-100	90-100	80-90	25-35	5-10
	12-60	Silty clay loam, silt loam.	CL-ML, CL	A-4, A-6	0	100	95-100	95-100	80-90	25-35	5-15
42*, 43*:											
Downey----------	0-17	Gravelly silt loam.	CL-ML, ML	A-4	0-5	60-80	55-75	50-70	50-70	20-30	NP-10
	17-60	Very gravelly coarse sand, extremely gravelly coarse sand.	GP	A-1	5-25	20-35	10-30	0-10	0-5	---	NP
Arimo-----------	0-18	Silt loam--------	ML, CL-ML	A-4	0-5	80-95	75-90	70-85	65-80	20-30	NP-10
	18-33	Silt loam--------	ML, CL-ML	A-4	0-5	80-95	75-90	70-85	65-80	20-30	NP-10
	33-60	Extremely gravelly coarse sand.	GP	A-1	5-25	20-30	10-20	0-10	0-5	---	NP

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
44*:											
Enochville------	0-12	Silt loam--------	CL-ML, CL	A-4, A-6	0	95-100	95-100	95-100	85-95	20-35	5-15
	12-43	Silt loam, silty clay loam.	CL	A-6	0	95-100	95-100	95-100	85-90	25-40	10-25
	43-60	Very cobbly sandy loam, extremely cobbly sandy loam.	GM, GM-GC	A-1, A-2	30-50	35-65	30-60	25-55	15-35	15-25	NP-10
Enochville Variant--------	0-11	Gravelly silt loam.	CL-ML, ML	A-4	10-15	70-80	65-75	60-70	50-60	15-25	NP-10
	11-24	Gravelly silt loam, gravelly loam.	CL-ML, CL	A-6, A-4	10-15	80-90	75-85	65-80	50-70	25-35	5-15
	24-60	Very gravelly loam, extremely gravelly loam.	GM, GM-GC	A-1, A-2	10-30	35-50	25-40	20-35	15-25	15-25	NP-10
45*:											
Greys-----------	0-19	Silt loam--------	ML, CL-ML	A-4	0	100	100	100	90-100	15-30	NP-10
	19-60	Silt loam, silty clay loam.	CL-ML, CL	A-4, A-6	0	100	100	100	90-100	25-35	5-15
Pavohroo--------	0-3	Silt loam--------	ML, CL-ML	A-4	0-5	90-95	85-90	80-85	70-75	15-25	NP-10
	3-26	Silt loam--------	CL, CL-ML	A-6, A-4	0-10	90-95	85-90	80-85	70-75	20-35	5-15
	26-60	Loam, gravelly loam, stony loam.	CL, CL-ML	A-6, A-4	10-25	75-95	70-90	65-85	50-60	20-35	5-15
Sedgway---------	0-5	Gravelly silt loam.	ML, CL-ML	A-4	0-5	75-80	70-75	65-75	60-70	25-35	5-10
	5-21	Very cobbly silt loam, very cobbly loam.	CL-ML, GM-GC, GM	A-4	40-55	65-85	60-80	55-75	45-65	25-35	5-10
	21-60	Very cobbly clay loam, very cobbly silty clay loam.	CL, GC	A-6	40-55	50-75	50-70	40-65	35-60	30-40	10-15
46--------------- Hades	0-7	Gravelly silt loam.	CL-ML	A-4	0-5	65-80	60-75	55-75	50-60	20-30	5-10
	7-60	Gravelly silt loam, gravelly silty clay loam.	CL, GC	A-6	0-10	60-85	60-80	55-80	45-75	25-40	10-20
47*:											
Hades-----------	0-7	Gravelly silt loam.	CL-ML	A-4	0-5	65-80	60-75	55-75	50-60	20-30	5-10
	7-60	Gravelly silt loam, gravelly silty clay loam.	CL, GC	A-6	0-10	60-85	60-80	55-80	45-75	25-40	10-20
Camelback-------	0-21	Gravelly silt loam.	GM-GC, GM	A-4	0-5	55-70	50-65	45-60	35-50	20-30	NP-10
	21-60	Extremely gravelly silt loam, extremely cobbly silt loam.	GM-GC, GC	A-2, A-1	15-55	25-50	20-45	20-40	15-35	25-35	5-15

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
47*:											
Hondoho---------	0-15	Cobbly silt loam	CL-ML, ML	A-4	25-40	70-90	70-85	55-80	50-70	25-35	5-10
	15-60	Very cobbly sandy clay loam, very cobbly loam, extremely cobbly loam.	GC, GM	A-2, A-1	45-60	20-50	15-45	15-35	5-20	30-40	5-15
48*:											
Hades-----------	0-7	Gravelly silt loam.	CL-ML	A-4	0-5	65-80	60-75	55-75	50-60	20-30	5-10
	7-60	Gravelly silt loam, gravelly silty clay loam.	CL, GC	A-6	0-10	60-85	60-80	55-80	45-75	25-40	10-20
Holmes----------	0-16	Very cobbly loam	GM, SM	A-2, A-4, A-1	30-40	55-70	50-65	30-55	20-45	20-30	NP-5
	16-28	Very gravelly loam, extremely gravelly sandy loam, very cobbly clay loam.	GM-GC, GC	A-1, A-2	10-40	35-60	25-50	20-45	15-35	20-35	5-15
	28-60	Extremely gravelly loamy coarse sand.	GP-GM	A-1	20-40	25-40	20-30	10-15	5-10	---	NP
49*:											
Hades-----------	0-7	Gravelly silt loam.	CL-ML	A-4	0-5	65-80	60-75	55-75	50-60	20-30	5-10
	7-60	Gravelly silt loam, gravelly silty clay loam.	CL, GC	A-6	0-10	60-85	60-80	55-80	45-75	25-40	10-20
Lanoak----------	0-22	Silt loam--------	ML	A-4	0	100	100	95-100	90-100	20-25	NP-5
	22-60	Silt loam--------	CL, CL-ML	A-6, A-4	0	100	100	95-100	90-100	25-35	5-15
50*:											
Hades-----------	0-7	Gravelly silt loam.	CL-ML	A-4	0-5	65-80	60-75	55-75	50-60	20-30	5-10
	7-60	Gravelly silt loam, gravelly silty clay loam.	CL, GC	A-6	0-10	60-85	60-80	55-80	45-75	25-40	10-20
Lanoak----------	0-22	Silt loam--------	ML	A-4	0	100	100	95-100	90-100	20-25	NP-5
	22-60	Silt loam--------	CL, CL-ML	A-6, A-4	0	100	100	95-100	90-100	25-35	5-15
Camelback-------	0-21	Gravelly silt loam.	GM-GC, GM	A-4	0-5	55-70	50-65	45-60	35-50	20-30	NP-10
	21-42	Extremely gravelly silt loam, extremely cobbly silt loam.	GM-GC, GC	A-2, A-1	15-55	25-50	20-45	20-40	15-35	25-35	5-15
	42	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
51*:											
Harkness--------	0-8	Silt loam--------	ML, CL-ML	A-4	0-10	95-100	90-100	85-95	75-85	25-35	5-10
	8-14	Very cobbly loam, stony silt loam.	ML, CL-ML	A-4	15-35	70-95	65-90	55-85	50-70	25-35	5-10
	14-60	Clay loam, silty clay loam, cobbly silty clay.	CL, CH	A-7	0-30	85-95	80-90	75-90	65-90	45-60	25-35

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
51*:											
Sedgway---------	0-5	Gravelly silt loam.	ML, CL-ML	A-4	0-5	75-80	70-75	65-75	60-70	25-35	5-10
	5-21	Very cobbly silt loam, very cobbly loam.	CL-ML, GM-GC, GM	A-4	40-55	65-85	60-80	55-75	45-65	25-35	5-10
	21-60	Very cobbly clay loam, very cobbly silty clay loam.	CL, GC	A-6	40-55	50-75	50-70	40-65	35-60	30-40	10-15
Mikesell--------	0-11	Silt loam--------	ML, CL-ML	A-4	0-5	85-95	80-90	75-85	65-75	25-35	5-10
	11-31	Gravelly silty clay, gravelly clay.	CL, CH	A-7	0-10	65-80	60-75	55-70	50-65	40-60	20-30
	31-60	Very cobbly silty clay, very stony clay.	CL, CH, GC	A-7	30-45	55-75	50-70	45-70	40-65	40-60	20-30
52--------------- Holmes	0-16	Gravelly loam----	GM-GC, SM-SC	A-4	0-5	60-80	50-70	40-60	35-45	20-30	5-10
	16-28	Very gravelly loam, extremely gravelly sandy loam, very cobbly clay loam.	GM-GC, GC	A-1, A-2	10-40	35-60	25-50	20-45	15-35	20-35	5-15
	28-60	Extremely gravelly loamy coarse sand.	GP-GM	A-1	20-40	25-40	20-30	10-15	5-10	---	NP
53*:											
Hondoho---------	0-15	Gravelly silt loam.	ML, CL-ML	A-4	0-10	75-85	65-75	60-75	50-65	25-35	5-10
	15-60	Very gravelly loam, very cobbly loam, very gravelly silt loam.	GM, GM-GC	A-2, A-1	5-45	35-55	35-50	30-45	20-35	25-35	5-10
Arbone----------	0-9	Gravelly silt loam.	ML	A-4	0-5	75-80	70-75	60-70	50-60	20-35	NP-10
	9-60	Gravelly silt loam.	ML, GM	A-4	0-5	60-80	55-75	50-70	40-60	20-35	NP-10
54*:											
Hondoho---------	0-15	Cobbly silt loam	CL-ML, ML	A-4	25-40	70-90	70-85	55-80	50-70	25-35	5-10
	15-60	Very cobbly sandy clay loam, very cobbly loam, extremely cobbly loam.	GC, GM	A-2, A-1	45-60	20-50	15-45	15-35	5-20	30-40	5-15
Arbone----------	0-9	Gravelly silt loam.	ML	A-4	0-5	75-80	70-75	60-70	50-60	20-35	NP-10
	9-60	Gravelly silt loam.	ML, GM	A-4	0-5	60-80	55-75	50-70	40-60	20-35	NP-10
Ririe-----------	0-12	Silt loam--------	ML, CL-ML	A-4	0	95-100	95-100	95-100	75-90	20-30	NP-10
	12-60	Silt loam--------	ML, CL-ML	A-4	0	95-100	95-100	95-100	75-90	20-30	NP-10

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
55*:											
Hondoho---------	0-15	Cobbly silt loam	CL-ML, ML	A-4	25-40	70-90	70-85	55-80	50-70	25-35	5-10
	15-60	Very cobbly sandy clay loam, very cobbly loam, extremely cobbly loam.	GC, GM	A-2, A-1	45-60	20-50	15-45	15-35	5-20	30-40	5-15
Hades-----------	0-7	Gravelly silt loam.	CL-ML	A-4	0-5	65-80	60-75	55-75	50-60	20-30	5-10
	7-60	Gravelly silt loam, gravelly silty clay loam.	CL, GC	A-6	0-10	60-85	60-80	55-80	45-75	25-40	10-20
56*:											
Hondoho---------	0-15	Cobbly silt loam	CL-ML, ML	A-4	25-40	70-90	70-85	55-80	50-70	25-35	5-10
	15-60	Very cobbly sandy clay loam, very cobbly loam, extremely cobbly loam.	GC, GM	A-2, A-1	45-60	20-50	15-45	15-35	5-20	30-40	5-15
Lanoak----------	0-22	Silt loam--------	ML	A-4	0	100	100	95-100	90-100	20-25	NP-5
	22-60	Silt loam--------	CL, CL-ML	A-6, A-4	0	100	100	95-100	90-100	25-35	5-15
Camelback-------	0-21	Gravelly silt loam.	GM-GC, GM	A-4	0-5	55-70	50-65	45-60	35-50	20-30	NP-10
	21-60	Extremely gravelly silt loam, extremely cobbly silt loam.	GM-GC, GC	A-2, A-1	15-55	25-50	20-45	20-40	15-35	25-35	5-15
57, 58----------- Inkom	0-7	Silt loam--------	ML, CL-ML	A-4	0	100	95-100	95-100	80-90	15-25	NP-10
	7-60	Silt loam--------	CL, CL-ML	A-4, A-6	0	100	95-100	95-100	80-90	25-35	5-15
59*:											
Ireland---------	0-7	Extremely stony silt loam.	GM	A-2, A-4	40-50	45-70	40-65	35-55	30-50	20-25	NP-5
	7-30	Very stony silt loam, extremely stony silt loam.	GM-GC, GW-GC	A-1, A-2	40-50	20-55	15-50	15-40	10-35	25-30	5-10
	30	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Camelback-------	0-21	Very cobbly silt loam.	GM-GC, GM, SM, ML	A-4	30-40	55-75	50-70	45-65	35-60	20-30	NP-10
	21-42	Extremely gravelly silt loam, extremely cobbly silt loam.	GM-GC, GC	A-2, A-1	15-55	25-50	20-45	20-40	15-35	25-35	5-15
	42	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Rock outcrop.											
60*:											
Ireland---------	0-7	Extremely stony silt loam.	GM	A-2, A-4	40-50	45-70	40-65	35-55	30-50	20-25	NP-5
	7-30	Very stony silt loam, extremely stony silt loam.	GM-GC, GW-GC	A-1, A-2	40-50	20-55	15-50	15-40	10-35	25-30	5-10
	30	Unweathered bedrock.	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
60*:											
Dateman	0-9	Cobbly silt loam	CL-ML, ML	A-4	15-25	75-95	70-90	65-85	60-80	20-30	NP-10
	9-35	Extremely cobbly silt loam.	GM-GC, GM	A-4, A-2	60-70	50-70	45-65	40-60	30-50	20-30	NP-10
	35	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Pavohroo	0-3	Silt loam	ML, CL-ML	A-4	0-5	90-95	85-90	80-85	70-75	15-25	NP-10
	3-26	Silt loam	CL, CL-ML	A-6, A-4	0-10	90-95	85-90	80-85	70-75	20-35	5-15
	26-60	Loam, gravelly loam, stony loam.	CL, CL-ML	A-6, A-4	10-25	75-95	70-90	65-85	50-60	20-35	5-15
61*:											
Ireland	0-7	Extremely stony silt loam.	GM	A-2, A-4	40-50	45-70	40-65	35-55	30-50	20-25	NP-5
	7-30	Very stony silt loam, extremely stony silt loam.	GM-GC, GW-GC	A-1, A-2	40-50	20-55	15-50	15-40	10-35	25-30	5-10
	30	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Hades	0-7	Gravelly silt loam.	CL-ML	A-4	0-5	65-80	60-75	55-75	50-60	20-30	5-10
	7-60	Gravelly silt loam, gravelly silty clay loam.	CL, GC	A-6	0-10	60-85	60-80	55-80	45-75	25-40	10-20
Cedarhill	0-9	Very cobbly silt loam.	GM, GM-GC	A-4	40-50	60-75	55-70	50-65	40-50	15-25	NP-10
	9-28	Very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4	40-65	55-75	50-70	45-65	35-50	20-30	NP-10
	28-60	Very cobbly loam, very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4, A-2	40-65	55-65	50-60	45-55	30-45	15-25	NP-10
62, 63	0-13	Silt loam	ML	A-4	0	95-100	95-100	85-95	85-90	20-30	NP-5
Joes	13-60	Silt loam	ML, CL-ML	A-4	0	95-100	95-100	85-95	85-90	20-30	NP-10
64	0-4	Silt loam	ML, CL-ML	A-4	0	100	95-100	95-100	85-95	15-30	NP-10
Joevar	4-60	Silt loam	ML, CL-ML	A-4	0	100	95-100	95-100	85-95	15-30	NP-10
65, 66, 67, 68	0-22	Silt loam	ML	A-4	0	100	100	95-100	90-100	20-25	NP-5
Lanoak	22-60	Silt loam	CL, CL-ML	A-6, A-4	0	100	100	95-100	90-100	25-35	5-15
69*:											
Lanoak	0-22	Silt loam	ML	A-4	0	100	100	95-100	90-100	20-25	NP-5
	22-60	Silt loam	CL, CL-ML	A-6, A-4	0	100	100	95-100	90-100	25-35	5-15
Camelback	0-21	Gravelly silt loam.	GM-GC, GM	A-4	0-5	55-70	50-65	45-60	35-50	20-30	NP-10
	21-42	Extremely gravelly silt loam, extremely cobbly silt loam.	GM-GC, GC	A-2, A-1	15-55	25-50	20-45	20-40	15-35	25-35	5-15
	42	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
70*, 71*:											
Lanoak	0-22	Silt loam	ML	A-4	0	100	100	95-100	90-100	20-25	NP-5
	22-60	Silt loam	CL, CL-ML	A-6, A-4	0	100	100	95-100	90-100	25-35	5-15

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
70*, 71*:											
Greys----------	0-19	Silt loam--------	ML, CL-ML	A-4	0	100	100	100	90-100	15-30	NP-10
	19-60	Silt loam, silty clay loam.	CL-ML, CL	A-4, A-6	0	100	100	100	90-100	25-35	5-15
72*:											
Lanoak----------	0-22	Silt loam--------	ML	A-4	0	100	100	95-100	90-100	20-25	NP-5
	22-60	Silt loam--------	CL, CL-ML	A-6, A-4	0	100	100	95-100	90-100	25-35	5-15
Hades-----------	0-7	Gravelly silt loam.	CL-ML	A-4	0-5	65-80	60-75	55-75	50-60	20-30	5-10
	7-60	Gravelly silt loam, gravelly silty clay loam.	CL, GC	A-6	0-10	60-85	60-80	55-80	45-75	25-40	10-20
73*:											
Lanoak----------	0-22	Silt loam--------	ML	A-4	0	100	100	95-100	90-100	20-25	NP-5
	22-60	Silt loam--------	CL, CL-ML	A-6, A-4	0	100	100	95-100	90-100	25-35	5-15
Watercanyon-----	0-7	Silt loam--------	CL-ML, ML	A-4	0	100	100	95-100	90-100	15-30	NP-10
	7-16	Silt loam--------	CL-ML, ML	A-4	0	100	100	95-100	90-100	15-30	NP-10
	16-60	Silt loam, very fine sandy loam, silt.	ML	A-4	0	100	100	95-100	75-100	15-25	NP-5
Rexburg---------	0-10	Silt loam--------	ML, CL-ML	A-4	0	100	100	95-100	80-100	25-35	5-10
	10-26	Silt loam--------	ML, CL-ML	A-4	0	100	100	95-100	80-100	25-35	5-10
	26-60	Silt loam, silt	ML	A-4	0	100	100	95-100	80-100	25-35	NP-10
74*:											
Lava flows.											
McCarey---------	0-12	Silt loam--------	ML	A-4	0-5	95-100	90-100	85-100	60-90	20-35	NP-10
	12-17	Clay loam, silty clay loam, silt loam.	CL, CL-ML	A-6, A-4	0-5	85-100	85-100	80-100	65-85	25-40	5-15
	17-28	Silt loam, loam	ML	A-4	0-5	85-100	85-100	80-100	65-85	20-35	NP-10
	28	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
McCarey Variant-	0-8	Extremely stony silt loam.	ML	A-4	50-65	75-90	70-85	65-80	60-75	20-25	NP-5
	8-13	Very stony silt loam, very stony loam.	CL-ML, ML	A-4	50-65	75-90	70-85	65-80	60-75	20-30	NP-10
	13	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
75*:											
Manila----------	0-7	Silt loam--------	CL-ML, CL	A-4, A-6	0	95-100	90-100	85-95	70-90	25-35	5-15
	7-48	Clay, silty clay, silty clay loam.	CL, CH	A-7	0-5	100	95-100	85-100	75-90	40-60	20-35
	48-60	Silt loam, loam	ML, CL-ML	A-4	0-5	95-100	95-100	85-95	75-90	20-30	NP-10
Bancroft--------	0-7	Silt loam--------	ML, CL-ML	A-4	0	100	100	100	95-100	20-30	NP-10
	7-37	Silt loam, silty clay loam.	CL	A-6	0	100	100	100	95-100	30-40	10-20
	37-60	Silt loam--------	ML, CL-ML	A-4	0	100	100	100	95-100	20-30	NP-10
76*:											
Manila----------	0-7	Silt loam--------	CL-ML, CL	A-4, A-6	0	95-100	90-100	85-95	70-90	25-35	5-15
	7-48	Clay, silty clay, silty clay loam.	CL, CH	A-7	0-5	100	95-100	85-100	75-90	40-60	20-35
	48-60	Silt loam, loam	ML, CL-ML	A-4	0-5	95-100	95-100	85-95	75-90	20-30	NP-10

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
76*:											
Cedarhill-------	0-9	Very cobbly silt loam.	GM, GM-GC	A-4	40-50	60-75	55-70	50-65	40-50	15-25	NP-10
	9-28	Very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4	40-65	55-75	50-70	45-65	35-50	20-30	NP-10
	28-60	Very cobbly loam, very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4, A-2	40-65	55-65	50-60	45-55	30-45	15-25	NP-10
77*:											
McDole----------	0-21	Silt loam--------	ML	A-4	0	100	100	95-100	80-95	25-35	NP-10
	21-60	Silt loam--------	ML, CL-ML	A-4	0	100	100	95-100	80-100	20-30	NP-10
McDole Variant--	0-34	Silt loam--------	ML, CL-ML	A-4	0	100	100	85-95	70-80	20-30	NP-10
	34-60	Fine sandy loam, loam.	ML, CL-ML	A-4	0	100	100	85-95	60-80	20-30	NP-10
78---------------	0-24	Silt loam--------	ML, CL-ML	A-4	0	80-95	75-90	70-85	65-80	20-30	NP-10
Moonlight	24-60	Silt loam--------	ML, CL-ML	A-4	0	80-95	75-90	70-85	65-80	20-30	NP-10
79*:											
Moonlight-------	0-24	Silt loam--------	ML, CL-ML	A-4	0	80-95	75-90	70-85	65-80	20-30	NP-10
	24-60	Silt loam--------	ML, CL-ML	A-4	0	80-95	75-90	70-85	65-80	20-30	NP-10
Camelback-------	0-21	Gravelly silt loam.	GM-GC, GM	A-4	0-5	55-70	50-65	45-60	35-50	20-30	NP-10
	21-42	Extremely gravelly silt loam, extremely cobbly silt loam.	GM-GC, GC	A-2, A-1	15-55	25-50	20-45	20-40	15-35	25-35	5-15
	42	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
80*:											
Moonlight-------	0-24	Silt loam--------	ML, CL-ML	A-4	0	80-95	75-90	70-85	65-80	20-30	NP-10
	24-60	Silt loam--------	ML, CL-ML	A-4	0	80-95	75-90	70-85	65-80	20-30	NP-10
Pavohroo--------	0-3	Silt loam--------	ML, CL-ML	A-4	0-5	90-95	85-90	80-85	70-75	15-25	NP-10
	3-26	Silt loam--------	CL, CL-ML	A-6, A-4	0-10	90-95	85-90	80-85	70-75	20-35	5-15
	26-60	Loam, gravelly loam, stony loam.	CL, CL-ML	A-6, A-4	10-25	75-95	70-90	65-85	50-60	20-35	5-15
81---------------	0-5	Silty clay loam	CL	A-6, A-7	0	100	95-100	95-100	85-95	35-45	15-25
Oxford	5-63	Silty clay, clay	CH, CL	A-7	0	100	100	95-100	90-95	40-60	20-40
82*:											
Oxford----------	0-5	Silty clay loam	CL	A-6, A-7	0	100	95-100	95-100	85-95	35-45	15-25
	5-63	Silty clay, clay	CH, CL	A-7	0	100	100	95-100	90-95	40-60	20-40
Banida----------	0-6	Silty clay loam	CL	A-6, A-7	0	100	95-100	90-100	80-95	30-45	10-20
	6-64	Silty clay, clay	CH, CL	A-7	0	100	100	95-100	90-100	40-60	20-40
83*:											
Pavohroo--------	0-3	Silt loam--------	ML, CL-ML	A-4	0-5	90-95	85-90	80-85	70-75	15-25	NP-10
	3-26	Silt loam--------	CL, CL-ML	A-6, A-4	0-10	90-95	85-90	80-85	70-75	20-35	5-15
	26-60	Loam, gravelly loam, stony loam.	CL, CL-ML	A-6, A-4	10-25	75-95	70-90	65-85	50-60	20-35	5-15

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
83*:											
Moonlight--------	0-24	Silt loam--------	ML, CL-ML	A-4	0	80-95	75-90	70-85	65-80	20-30	NP-10
	24-60	Silt loam--------	ML, CL-ML	A-4	0	80-95	75-90	70-85	65-80	20-30	NP-10
84*:											
Pavohroo---------	0-3	Silt loam--------	ML, CL-ML	A-4	0-5	90-95	85-90	80-85	70-75	15-25	NP-10
	3-26	Silt loam--------	CL, CL-ML	A-6, A-4	0-10	90-95	85-90	80-85	70-75	20-35	5-15
	26-60	Loam, gravelly loam, stony loam.	CL, CL-ML	A-6, A-4	10-25	75-95	70-90	65-85	50-60	20-35	5-15
Sedgway----------	0-5	Gravelly silt loam.	ML, CL-ML	A-4	0-5	75-80	70-75	65-75	60-70	25-35	5-10
	5-21	Very cobbly silt loam, very cobbly loam.	CL-ML, GM-GC, GM	A-4	40-55	65-85	60-80	55-75	45-65	25-35	5-10
	21-60	Very cobbly clay loam, very cobbly silty clay loam.	CL, GC	A-6	40-55	50-75	50-70	40-65	35-60	30-40	10-15
Toponce----------	0-3	Silt loam--------	CL-ML, CL	A-4, A-6	0-5	90-100	85-100	85-95	70-90	20-30	5-15
	3-14	Silt loam, silty clay loam.	CL-ML, CL	A-4, A-6	0-5	95-100	90-100	90-95	85-95	25-35	5-15
	14-60	Silty clay loam, silty clay, clay.	CL, CH	A-7	0-5	95-100	90-100	90-95	85-95	45-60	20-35
85*, 86*. Pits											
87, 88, 89, 90, 91--------------	0-8	Silt loam--------	ML	A-4	0	100	100	95-100	80-95	25-35	NP-10
Pocatello	8-40	Silt loam--------	ML	A-4	0	100	100	95-100	80-95	25-35	NP-10
	40-60	Silt loam, silt	ML	A-4	0	100	100	95-100	80-95	25-35	NP-10
92*:											
Portino----------	0-9	Silt loam--------	ML, CL-ML	A-4	0-10	95-100	95-100	90-100	75-90	20-30	NP-10
	9-29	Silt loam--------	ML, CL-ML	A-4	0-5	95-100	95-100	95-100	75-90	20-30	NP-10
	29	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Thornock---------	0-2	Stony silt loam	ML, CL-ML	A-4	15-30	85-95	80-90	75-85	70-80	15-30	NP-10
	2-14	Silt loam--------	ML, CL-ML	A-4	0-5	90-100	85-100	80-90	75-85	15-30	NP-10
	14	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
93, 94, 95, 96---	0-10	Silt loam--------	ML, CL-ML	A-4	0	100	100	95-100	80-100	25-35	5-10
Rexburg	10-26	Silt loam--------	ML, CL-ML	A-4	0	100	100	95-100	80-100	25-35	5-10
	26-60	Silt loam, silt	ML	A-4	0	100	100	95-100	80-100	25-35	NP-10
97, 98, 99--------	0-12	Silt loam--------	ML, CL-ML	A-4	0	95-100	95-100	95-100	75-90	20-30	NP-10
Ririe	12-60	Silt loam--------	ML, CL-ML	A-4	0	95-100	95-100	95-100	75-90	20-30	NP-10
100*, 101*, 102*:											
Ririe------------	0-12	Silt loam--------	ML, CL-ML	A-4	0	95-100	95-100	95-100	75-90	20-30	NP-10
	12-60	Silt loam--------	ML, CL-ML	A-4	0	95-100	95-100	95-100	75-90	20-30	NP-10
Watercanyon------	0-7	Silt loam--------	CL-ML, ML	A-4	0	100	100	95-100	90-100	15-30	NP-10
	7-16	Silt loam--------	CL-ML, ML	A-4	0	100	100	95-100	90-100	15-30	NP-10
	16-60	Silt loam, very fine sandy loam, silt.	ML	A-4	0	100	100	95-100	75-100	15-25	NP-5

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
103*:											
Ririe-----------	0-12	Silt loam--------	ML, CL-ML	A-4	0	95-100	95-100	95-100	75-90	20-30	NP-10
	12-60	Silt loam--------	ML, CL-ML	A-4	0	95-100	95-100	95-100	75-90	20-30	NP-10
Watercanyon-----	0-7	Silt loam--------	CL-ML, ML	A-4	0	100	100	95-100	90-100	15-30	NP-10
	7-16	Silt loam--------	CL-ML, ML	A-4	0	100	100	95-100	90-100	15-30	NP-10
	16-60	Silt loam, very fine sandy loam, silt.	ML	A-4	0	100	100	95-100	75-100	15-25	NP-5
Cedarhill-------	0-9	Very cobbly silt loam.	GM, GM-GC	A-4	40-50	60-75	55-70	50-65	40-50	15-25	NP-10
	9-28	Very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4	40-65	55-75	50-70	45-65	35-50	20-30	NP-10
	28-60	Very cobbly loam, very cobbly silt loam, extremely cobbly silt loam.	GM, GM-GC	A-4, A-2	40-65	55-65	50-60	45-55	30-45	15-25	NP-10
104*. Rock outcrop											
105*: Rubble land.											
Haploxerolls.											
106*:											
Scout Variant---	0-3	Gravelly silt loam.	ML, CL-ML	A-4	0-10	70-85	65-80	60-75	55-70	20-30	NP-10
	3-16	Very cobbly silt loam, very cobbly loam.	GM, GM-GC, ML, CL-ML	A-4	45-55	55-75	50-70	45-65	35-55	20-30	NP-10
	16-60	Extremely stony silt loam, very cobbly silt loam, extremely cobbly loam.	GM, GM-GC	A-4, A-2	55-70	45-65	40-60	35-55	30-50	20-30	NP-10
Camelback Variant--------	0-10	Gravelly silt loam.	ML, CL-ML, GM, GM-GC	A-4	5-10	65-75	60-70	55-65	45-55	20-30	NP-10
	10-60	Very cobbly loam, extremely cobbly loam.	GM, GM-GC, GC	A-2	30-70	45-55	40-50	35-45	25-35	20-35	NP-15
107*:											
Sedgway---------	0-5	Gravelly silt loam.	ML, CL-ML	A-4	0-5	75-80	70-75	65-75	60-70	25-35	5-10
	5-21	Very cobbly silt loam, very cobbly loam.	CL-ML, GM-GC, GM	A-4	40-55	65-85	60-80	55-75	45-65	25-35	5-10
	21-60	Very cobbly clay loam, very cobbly silty clay loam.	CL, GC	A-6	40-55	50-75	50-70	40-65	35-60	30-40	10-15
Beaverdam-------	0-12	Silt loam--------	ML, CL-ML	A-4	0-10	95-100	90-100	85-95	85-90	25-35	5-10
	12-65	Silty clay loam, silty clay.	CL	A-7	0-10	95-100	90-100	90-100	80-90	40-50	15-25
108*. Slickens											

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
109*:											
Swanner----------	0-9	Extremely stony loam.	SM, SM-SC	A-4	25-75	75-90	65-80	60-70	35-50	15-30	NP-10
	9-17	Very stony loam, extremely stony loam.	SM, SM-SC, GM, GM-GC	A-4	50-75	60-80	60-80	55-70	35-50	15-20	NP-5
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Hondoho----------	0-15	Cobbly silt loam	CL-ML, ML	A-4	25-40	70-90	70-85	55-80	50-70	25-35	5-10
	15-60	Very cobbly sandy clay loam, very cobbly loam, extremely cobbly loam.	GC, GM	A-2, A-1	45-60	20-50	15-45	15-35	5-20	30-40	5-15
110*:											
Swanner----------	0-9	Extremely stony loam.	SM, SM-SC	A-4	25-75	75-90	65-80	60-70	35-50	15-30	NP-10
	9-17	Very stony loam, extremely stony loam.	SM, SM-SC, GM, GM-GC	A-4	50-75	60-80	60-80	55-70	35-50	15-20	NP-5
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Rock outcrop.											
111-------------- Tendoy	0-2	Silt loam--------	ML, CL-ML	A-4	0	100	100	95-100	85-95	15-30	NP-10
	2-10	Sapric material	PT	A-8	0	---	---	---	---	---	NP
	10-60	Sapric material	PT	A-8	0	---	---	---	---	---	NP
112*:											
Toponce----------	0-3	Silt loam--------	CL-ML, CL	A-4, A-6	0-5	90-100	85-100	85-95	70-90	20-30	5-15
	3-14	Silt loam, silty clay loam.	CL-ML, CL	A-4, A-6	0-5	95-100	90-100	90-95	85-95	25-35	5-15
	14-60	Silty clay loam, silty clay, clay.	CL, CH	A-7	0-5	95-100	90-100	90-95	85-95	45-60	20-35
Broadhead--------	0-2	Silt loam--------	ML, CL-ML	A-4	0-5	95-100	90-100	85-95	80-90	25-35	5-10
	2-9	Silty clay loam, silt loam.	CL	A-6	0-5	95-100	90-100	85-95	80-90	30-40	10-15
	9-60	Silty clay loam, silty clay.	CL, CH	A-7	0-5	95-100	85-95	80-90	75-85	40-55	15-30
113*, 114*: Urban land.											
Bahem------------	0-11	Silt loam--------	ML, CL-ML	A-4	0	95-100	95-100	95-100	85-95	20-30	NP-10
	11-49	Silt loam, silt	ML, CL-ML	A-4	0	95-100	95-100	95-100	90-95	20-30	NP-10
	49-60	Extremely cobbly sand, extremely stony sand.	GP, GP-GM	A-1	50-60	40-60	20-40	5-10	0-5	---	NP
Broxon-----------	0-8	Silt loam--------	ML, CL-ML	A-4	0	95-100	95-100	95-100	85-95	20-30	NP-10
	8-25	Silt loam, silt	ML, CL-ML	A-4	0	95-100	95-100	95-100	90-95	20-30	NP-10
	25-60	Extremely stony sand, extremely cobbly sand.	GP, SP	A-1	50-60	40-60	20-40	5-10	0-5	---	NP

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
115-------------- Valmar	0-9	Very cobbly silt loam.	GM, GM-GC	A-4	30-45	55-75	50-70	45-65	40-50	20-30	NP-10
	9-14	Very stony silt loam, very cobbly silt loam.	GM-GC, GC	A-4, A-6	30-45	55-75	50-70	50-65	40-50	25-35	5-15
	14-24	Extremely stony silt loam, extremely flaggy silt loam.	GM-GC, GC	A-4, A-6, A-2	70-85	35-70	30-65	30-55	25-50	25-35	5-15
	24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
116*:											
Valmar----------	0-9	Very cobbly silt loam.	GM, GM-GC	A-4	30-45	55-75	50-70	45-65	40-50	20-30	NP-10
	9-14	Very stony silt loam, very cobbly silt loam.	GM-GC, GC	A-4, A-6	30-45	55-75	50-70	50-65	40-50	25-35	5-15
	14-24	Extremely stony silt loam, extremely flaggy silt loam.	GM-GC, GC	A-4, A-6, A-2	70-85	35-70	30-65	30-55	25-50	25-35	5-15
	24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Camelback--------	0-21	Gravelly silt loam.	GM-GC, GM	A-4	0-5	55-70	50-65	45-60	35-50	20-30	NP-10
	21-42	Extremely gravelly silt loam, extremely cobbly silt loam.	GM-GC, GC	A-2, A-1	15-55	25-50	20-45	20-40	15-35	25-35	5-15
	42	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Hades-----------	0-7	Gravelly silt loam.	CL-ML	A-4	0-5	65-80	60-75	55-75	50-60	20-30	5-10
	7-60	Gravelly silt loam, gravelly silty clay loam.	CL, GC	A-6	0-10	60-85	60-80	55-80	45-75	25-40	10-20
117*:											
Valmar----------	0-9	Extremely stony silt loam.	ML, CL-ML	A-4	40-50	70-85	65-80	60-75	50-60	20-30	NP-10
	9-14	Very stony silt loam, very cobbly silt loam.	GM-GC, GC	A-4, A-6	30-45	55-75	50-70	50-65	40-50	25-35	5-15
	14-24	Extremely stony silt loam, extremely flaggy silt loam.	GM-GC, GC	A-4, A-6, A-2	70-85	35-70	30-65	30-55	25-50	25-35	5-15
	24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Hades-----------	0-7	Gravelly silt loam.	CL-ML	A-4	0-5	65-80	60-75	55-75	50-60	20-30	5-10
	7-60	Gravelly silt loam, gravelly silty clay loam.	CL, GC	A-6	0-10	60-85	60-80	55-80	45-75	25-40	10-20

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
118*:											
Valmar-----------	0-9	Extremely stony silt loam.	ML, CL-ML	A-4	40-50	70-85	65-80	60-75	50-60	20-30	NP-10
	9-14	Very stony silt loam, very cobbly silt loam.	GM-GC, GC	A-4, A-6	30-45	55-75	50-70	50-65	40-50	25-35	5-15
	14-24	Extremely stony silt loam, extremely flaggy silt loam.	GM-GC, GC	A-4, A-6, A-2	70-85	35-70	30-65	30-55	25-50	25-35	5-15
	24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Rock outcrop.											
119*:											
Valmar-----------	0-9	Very cobbly silt loam.	GM, GM-GC	A-4	30-45	55-75	50-70	45-65	40-50	20-30	NP-10
	9-14	Very stony silt loam, very cobbly silt loam.	GM-GC, GC	A-4, A-6	30-45	55-75	50-70	50-65	40-50	25-35	5-15
	14-24	Extremely stony silt loam, extremely flaggy silt loam.	GM-GC, GC	A-4, A-6, A-2	70-85	35-70	30-65	30-55	25-50	25-35	5-15
	24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Watercanyon-----	0-7	Silt loam--------	CL-ML, ML	A-4	0	100	100	95-100	90-100	15-30	NP-10
	7-16	Silt loam--------	CL-ML, ML	A-4	0	100	100	95-100	90-100	15-30	NP-10
	16-60	Silt loam, very fine sandy loam, silt.	ML	A-4	0	100	100	95-100	75-100	15-25	NP-5
Hondoho----------	0-15	Cobbly silt loam	CL-ML, ML	A-4	25-40	70-90	70-85	55-80	50-70	25-35	5-10
	15-60	Very cobbly sandy clay loam, very cobbly loam, extremely cobbly loam.	GC, GM	A-2, A-1	45-60	20-50	15-45	15-35	5-20	30-40	5-15
120-------------- Watercanyon	0-7	Silt loam--------	CL-ML, ML	A-4	0	100	100	95-100	90-100	15-30	NP-10
	7-16	Silt loam--------	CL-ML, ML	A-4	0	100	100	95-100	90-100	15-30	NP-10
	16-60	Silt loam, very fine sandy loam, silt.	ML	A-4	0	100	100	95-100	75-100	15-25	NP-5
121*:											
Watercanyon-----	0-7	Silt loam--------	CL-ML, ML	A-4	0	100	100	95-100	90-100	15-30	NP-10
	7-16	Silt loam--------	CL-ML, ML	A-4	0	100	100	95-100	90-100	15-30	NP-10
	16-60	Silt loam, very fine sandy loam, silt.	ML	A-4	0	100	100	95-100	75-100	15-25	NP-5
Swanner----------	0-9	Extremely stony loam.	SM, SM-SC	A-4	25-75	75-90	65-80	60-70	35-50	15-30	NP-10
	9-17	Very stony loam, extremely stony loam.	SM, SM-SC, GM, GM-GC	A-4	50-75	60-80	60-80	55-70	35-50	15-20	NP-5
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Rock outcrop.											

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
122--------------- Wursten	0-9	Gravelly silt loam.	CL-ML, ML	A-4	0-10	65-80	60-75	55-75	50-65	20-30	NP-10
	9-60	Gravelly loam, gravelly silt loam.	ML, CL-ML, GM, GM-GC	A-4	5-10	60-80	55-75	55-75	45-60	20-30	NP-10
123*:											
Wursten----------	0-9	Gravelly silt loam.	CL-ML, ML	A-4	0-10	65-80	60-75	55-75	50-65	20-30	NP-10
	9-60	Gravelly loam, gravelly silt loam.	ML, CL-ML, GM, GM-GC	A-4	5-10	60-80	55-75	55-75	45-60	20-30	NP-10
Watercanyon Variant---------	0-4	Silt loam--------	CL-ML, ML	A-4	0	90-100	85-100	80-95	75-90	15-30	NP-10
	4-60	Silt loam--------	CL-ML, ML	A-4	0	95-100	90-100	90-100	85-95	15-30	NP-10
Hondoho----------	0-15	Cobbly silt loam	CL-ML, ML	A-4	25-40	70-90	70-85	55-80	50-70	25-35	5-10
	15-60	Very cobbly sandy clay loam, very cobbly loam, extremely cobbly loam.	GC, GM	A-2, A-1	45-60	20-50	15-45	15-35	5-20	30-40	5-15

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS

[The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated]

Soil name and map symbol	Depth	Clay	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	In/hr	In/in	pH	mmhos/cm					Pct
1, 2------------	0-9	13-18	0.6-2.0	0.16-0.18	7.4-8.4	<2	Low-------	0.37	5	5	1-3
Arbone	9-60	13-18	0.6-2.0	0.16-0.18	7.4-8.4	<2	Low-------	0.43			
3*:											
Arbone----------	0-9	13-18	0.6-2.0	0.12-0.15	7.4-8.4	<2	Low-------	0.28	5	5	1-3
	9-60	13-18	0.6-2.0	0.12-0.15	7.4-8.4	<2	Low-------	0.32			
Hondoho---------	0-15	12-25	0.6-2.0	0.13-0.14	7.4-8.4	<2	Low-------	0.28	2	6	2-3
	15-60	18-27	0.6-2.0	0.08-0.11	7.9-8.4	<2	Low-------	0.17			
4*:											
Arbone----------	0-9	13-18	0.6-2.0	0.16-0.18	7.4-8.4	<2	Low-------	0.37	5	5	1-3
	9-60	13-18	0.6-2.0	0.16-0.18	7.4-8.4	<2	Low-------	0.43			
McCarey---------	0-12	10-20	0.6-2.0	0.16-0.21	6.1-7.8	<2	Low-------	0.43	2	5	1-3
	12-17	20-34	0.2-0.6	0.19-0.21	6.6-8.4	<2	Moderate	0.32			
	17-28	15-25	0.6-2.0	0.16-0.21	6.6-8.4	<2	Low-------	0.43			
	28	---	---	---	---	---	----------	----			
Lava flows.											
5*:											
Arbone----------	0-9	13-18	0.6-2.0	0.16-0.18	7.4-8.4	<2	Low-------	0.37	5	5	1-3
	9-60	13-18	0.6-2.0	0.16-0.18	7.4-8.4	<2	Low-------	0.43			
Rubble land.											
6---------------	0-18	10-18	0.6-2.0	0.18-0.20	6.6-7.8	<2	Low-------	0.37	2	5	1-3
Arimo	18-33	10-18	0.6-2.0	0.18-0.20	7.4-8.4	<2	Low-------	0.43			
	33-60	0-5	>20	0.02-0.04	7.4-8.4	<2	Low-------	0.10			
7, 8------------	0-11	8-18	0.6-2.0	0.19-0.21	7.4-7.8	<2	Low-------	0.43	3	4L	.8-2
Bahem	11-49	8-18	0.6-2.0	0.19-0.21	7.4-8.4	<2	Low-------	0.55			
	49-60	<5	>20	0.03-0.05	---	<2	Low-------	0.10			
9, 10-----------	0-7	15-20	0.6-2.0	0.19-0.21	6.1-7.3	<2	Low-------	0.43	5	5	2-3
Bancroft	7-37	18-32	0.6-2.0	0.19-0.21	6.1-7.8	<2	Low-------	0.43			
	37-60	10-20	0.6-2.0	0.19-0.21	7.4-9.0	<2	Low-------	0.55			
11*:											
Bancroft--------	0-7	15-20	0.6-2.0	0.19-0.21	6.1-7.3	<2	Low-------	0.43	5	5	2-3
	7-37	18-32	0.6-2.0	0.19-0.21	6.1-7.8	<2	Low-------	0.43			
	37-60	10-20	0.6-2.0	0.19-0.21	7.4-9.0	<2	Low-------	0.55			
Manila----------	0-7	18-27	0.6-2.0	0.16-0.18	6.1-7.3	<2	Moderate	0.43	5	6	2-4
	7-48	35-55	0.06-0.2	0.17-0.19	6.1-7.8	<2	High------	0.37			
	48-60	12-18	0.6-2.0	0.17-0.19	6.6-7.8	<2	Low-------	0.49			
12--------------	0-6	32-39	0.06-0.2	0.14-0.18	7.4-8.4	<2	Moderate	0.32	5	4	1-2
Banida	6-64	40-55	<0.06	0.14-0.16	7.4-8.4	2-4	High------	0.37			
13*:											
Bear Lake-------	0-12	18-27	0.6-2.0	0.19-0.21	7.4-8.4	2-4	Low-------	0.37	5	8	3-6
	12-60	18-34	0.2-0.6	0.19-0.21	7.4-9.0	2-8	Moderate	0.43			
Bear Lake Variant--------	0-5	18-25	0.6-2.0	0.17-0.22	7.4-8.4	2-4	Low-------	0.32	3	8	3-6
	5-17	23-30	0.2-0.6	0.16-0.21	7.4-8.4	2-8	Moderate	0.43			
	17-36	18-26	0.6-2.0	0.16-0.21	7.9-8.4	2-8	Low-------	0.43			
	36	---	---	---	---	---	----------	----			

See footnote at end of table.

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodibility group	Organic matter
	In	Pct	In/hr	In/in	pH	mmhos/cm					Pct
14*:											
Broadhead-------	0-2	15-25	0.6-2.0	0.18-0.20	5.6-6.5	<2	Low-------	0.28	2	6	2-4
	2-9	25-35	0.2-0.6	0.18-0.20	6.1-7.3	<2	Moderate	0.28			
	9-60	35-50	0.06-0.2	0.16-0.18	6.1-7.3	<2	High------	0.24			
Hades-----------	0-7	18-25	0.6-2.0	0.15-0.18	5.6-7.3	<2	Low-------	0.28	5	6	2-4
	7-60	24-35	0.2-0.6	0.15-0.18	5.6-8.4	<2	Moderate	0.32			
Yago------------	0-10	27-35	0.2-0.6	0.09-0.12	5.6-6.5	<2	Moderate	0.15	2	8	2-4
	10-45	35-50	0.06-0.2	0.08-0.11	6.1-7.3	<2	High------	0.17			
	45-60	23-35	0.2-0.6	0.09-0.12	6.6-7.8	<2	Moderate	0.17			
15*, 16*:											
Broadhead-------	0-2	15-25	0.6-2.0	0.18-0.20	5.6-6.5	<2	Low-------	0.28	2	6	2-4
	2-9	25-35	0.2-0.6	0.18-0.20	6.1-7.3	<2	Moderate	0.28			
	9-60	35-50	0.06-0.2	0.16-0.18	6.1-7.3	<2	High------	0.24			
Yago------------	0-10	27-35	0.2-0.6	0.09-0.12	5.6-6.5	<2	Moderate	0.15	2	8	2-4
	10-45	35-50	0.06-0.2	0.08-0.11	6.1-7.3	<2	High------	0.17			
	45-60	23-35	0.2-0.6	0.09-0.12	6.6-7.8	<2	Moderate	0.17			
17--------------- Broncho	0-6	10-15	0.6-2.0	0.09-0.13	7.4-8.4	<2	Low-------	0.24	1	5	.5-1
	6-13	10-15	0.6-2.0	0.09-0.13	7.4-8.4	<2	Low-------	0.24			
	13-60	<5	>20	0.02-0.04	7.4-8.4	<2	Low-------	0.05			
18--------------- Broncho	0-6	10-15	0.6-2.0	0.09-0.13	7.4-8.4	<2	Low-------	0.24	1	5	.5-1
	6-13	10-15	0.6-2.0	0.09-0.13	7.4-8.4	<2	Low-------	0.24			
	13-60	<5	>20	0.02-0.04	7.4-8.4	<2	Low-------	0.05			
19*:											
Broncho Variant-	0-4	10-20	0.6-2.0	0.09-0.11	6.6-7.8	<2	Low-------	0.17	5	8	.5-1
	4-28	20-30	0.6-2.0	0.08-0.11	6.6-8.4	2-4	Low-------	0.15			
	28-60	5-15	2.0-6.0	0.04-0.07	7.4-8.4	2-4	Low-------	0.10			
Pocatello-------	0-8	5-15	0.6-2.0	0.19-0.21	6.6-8.4	<2	Low-------	0.49	5	4L	.8-1
	8-40	5-15	0.6-2.0	0.19-0.21	7.9-9.0	2-4	Low-------	0.55			
	40-60	5-15	0.6-2.0	0.19-0.21	>7.8	8-16	Low-------	0.55			
20*:											
Broncho Variant-	0-4	10-20	0.6-2.0	0.09-0.11	6.6-7.8	<2	Low-------	0.17	5	8	.5-1
	4-28	20-30	0.6-2.0	0.08-0.11	6.6-8.4	2-4	Low-------	0.15			
	28-60	5-15	2.0-6.0	0.04-0.07	7.4-8.4	2-4	Low-------	0.10			
Ririe-----------	0-12	15-18	0.6-2.0	0.19-0.21	6.6-8.4	<2	Low-------	0.43	5	5	2-4
	12-60	12-18	0.6-2.0	0.19-0.21	7.4-9.0	<2	Low-------	0.55			
Pocatello-------	0-8	5-15	0.6-2.0	0.19-0.21	6.6-8.4	<2	Low-------	0.49	5	4L	.8-1
	8-40	5-15	0.6-2.0	0.19-0.21	7.9-9.0	2-4	Low-------	0.55			
	40-60	5-15	0.6-2.0	0.19-0.21	>7.8	8-16	Low-------	0.55			
21, 22----------- Broxon	0-8	8-18	0.6-2.0	0.19-0.21	7.4-8.4	<2	Low-------	0.43	2	4L	.8-2
	8-25	8-18	0.6-2.0	0.19-0.21	7.4-8.4	<2	Low-------	0.55			
	25-60	0-5	>20	0.03-0.05	7.4-8.4	<2	Low-------	0.05			
23*:											
Camelback-------	0-21	12-18	0.6-2.0	0.11-0.15	6.1-7.3	<2	Low-------	0.24	3	8	2-4
	21-42	18-27	0.6-2.0	0.08-0.11	6.1-7.3	<2	Low-------	0.20			
	42	---	---	---	---	---	-----------	----			
Cedarhill-------	0-9	10-16	0.6-2.0	0.09-0.12	7.4-8.4	<2	Low-------	0.17	5	8	1-3
	9-28	10-17	0.6-2.0	0.08-0.12	7.4-8.4	<2	Low-------	0.15			
	28-60	8-15	0.6-2.0	0.07-0.11	7.4-8.4	<4	Low-------	0.20			
Lanoak----------	0-22	10-20	0.6-2.0	0.19-0.21	6.1-7.8	<2	Low-------	0.37	5	5	3-5
	22-60	18-27	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.49			

See footnote at end of table.

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	In/hr	In/in	pH	mmhos/cm					Pct
24*:											
Camelback-------	0-21	12-18	0.6-2.0	0.11-0.15	6.1-7.3	<2	Low-------	0.32	5	5	2-4
	21-60	18-27	0.6-2.0	0.08-0.11	6.1-7.3	<2	Low-------	0.20			
Greys-----------	0-19	12-15	0.6-2.0	0.19-0.21	5.6-7.3	<2	Low-------	0.43	5	5	2-4
	19-60	18-35	0.2-0.6	0.19-0.21	5.6-7.3	<2	Moderate	0.43			
25*:											
Camelback-------	0-21	12-18	0.6-2.0	0.11-0.15	6.1-7.3	<2	Low-------	0.24	5	8	2-4
	21-60	18-27	0.6-2.0	0.08-0.11	6.1-7.3	<2	Low-------	0.20			
Hades-----------	0-7	18-25	0.6-2.0	0.15-0.18	5.6-7.3	<2	Low-------	0.28	5	6	2-4
	7-60	24-35	0.2-0.6	0.15-0.18	5.6-8.4	<2	Moderate	0.32			
26*:											
Camelback-------	0-21	12-18	0.6-2.0	0.11-0.15	6.1-7.3	<2	Low-------	0.32	3	5	2-4
	21-42	18-27	0.6-2.0	0.08-0.11	6.1-7.3	<2	Low-------	0.20			
	42	---	---	---	---	---	----------	----			
Valmar----------	0-9	13-20	0.6-2.0	0.10-0.15	6.1-7.3	<2	Low-------	0.24	2	8	2-4
	9-14	20-27	0.6-2.0	0.10-0.15	6.6-7.8	<2	Moderate	0.20			
	14-24	20-27	0.6-2.0	0.07-0.12	6.6-7.8	<2	Moderate	0.17			
	24	---	---	---	---	---	----------	----			
Hades-----------	0-7	18-25	0.6-2.0	0.15-0.18	5.6-7.3	<2	Low-------	0.28	5	6	2-4
	7-60	24-35	0.2-0.6	0.15-0.18	5.6-8.4	<2	Moderate	0.32			
27*:											
Camelback Variant--------	0-10	10-20	0.6-2.0	0.13-0.15	6.1-7.3	<2	Low-------	0.24	5	5	3-5
	10-60	10-25	0.6-2.0	0.08-0.11	6.1-7.3	<2	Low-------	0.15			
Valmar Variant--	0-9	10-15	0.6-2.0	0.10-0.13	6.1-6.5	<2	Low-------	0.17	2	8	3-5
	9-24	15-25	0.6-2.0	0.07-0.10	6.1-7.3	<2	Low-------	0.15			
	24	---	---	---	---	---	----------	----			
28---------------	0-9	10-16	0.6-2.0	0.09-0.12	7.4-8.4	<2	Low-------	0.17	5	8	1-3
Cedarhill	9-28	10-17	0.6-2.0	0.08-0.12	7.4-8.4	<2	Low-------	0.15			
	28-60	8-15	0.6-2.0	0.07-0.11	7.4-8.4	<4	Low-------	0.20			
29*:											
Cedarhill-------	0-9	10-16	0.6-2.0	0.09-0.12	7.4-8.4	<2	Low-------	0.17	5	8	1-3
	9-28	10-17	0.6-2.0	0.08-0.12	7.4-8.4	<2	Low-------	0.15			
	28-60	8-15	0.6-2.0	0.07-0.11	7.4-8.4	<4	Low-------	0.20			
Ireland---------	0-7	10-16	0.6-2.0	0.07-0.09	6.6-7.8	<2	Low-------	0.28	2	8	1-3
	7-30	16-22	0.6-2.0	0.05-0.07	7.4-8.4	<2	Low-------	0.20			
	30	---	---	---	---	---	----------	----			
Rock outcrop.											
30*:											
Cedarhill-------	0-9	10-16	0.6-2.0	0.09-0.12	7.4-8.4	<2	Low-------	0.17	5	8	1-3
	9-28	10-17	0.6-2.0	0.08-0.12	7.4-8.4	<2	Low-------	0.15			
	28-60	8-15	0.6-2.0	0.07-0.11	7.4-8.4	<4	Low-------	0.20			
Ririe-----------	0-12	15-18	0.6-2.0	0.19-0.21	6.6-8.4	<2	Low-------	0.43	5	5	2-4
	12-60	12-18	0.6-2.0	0.19-0.21	7.4-9.0	<2	Low-------	0.55			
Watercanyon-----	0-7	10-18	0.6-2.0	0.16-0.20	7.4-7.8	<2	Low-------	0.49	5	5	1-2
	7-16	10-18	0.6-2.0	0.16-0.20	7.4-8.4	<2	Low-------	0.55			
	16-60	5-16	0.6-2.0	0.14-0.18	7.9-9.0	2-4	Low-------	0.55			

See footnote at end of table.

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodibility group	Organic matter
	In	Pct	In/hr	In/in	pH	mmhos/cm					Pct
31*:											
Cedarhill-------	0-9	10-16	0.6-2.0	0.09-0.12	7.4-8.4	<2	Low-------	0.17	5	8	1-3
	9-28	10-17	0.6-2.0	0.08-0.12	7.4-8.4	<2	Low-------	0.15			
	28-60	8-15	0.6-2.0	0.07-0.11	7.4-8.4	<4	Low-------	0.20			
Rock outcrop.											
32*:											
Cedarhill-------	0-9	10-16	0.6-2.0	0.09-0.12	6.6-8.4	<2	Low-------	0.17	5	8	1-3
	9-28	10-17	0.6-2.0	0.08-0.11	7.4-8.4	<2	Low-------	0.15			
	28-60	8-15	0.6-2.0	0.07-0.10	7.4-8.4	<4	Low-------	0.15			
Camelback-------	0-21	12-18	0.6-2.0	0.11-0.15	6.1-7.3	<2	Low-------	0.32	3	5	2-4
	21-42	18-27	0.6-2.0	0.08-0.11	6.1-7.3	<2	Low-------	0.20			
	42	---	---	---	---	---	----------	----			
Moonlight-------	0-24	12-18	0.6-2.0	0.19-0.21	5.6-7.3	<2	Low-------	0.32	5	5	4-6
	24-60	12-18	0.6-2.0	0.19-0.21	5.6-7.3	<2	Low-------	0.37			
33*:											
Cedarhill-------	0-9	10-16	0.6-2.0	0.09-0.12	6.6-8.4	<2	Low-------	0.17	5	8	1-3
	9-28	10-17	0.6-2.0	0.08-0.11	7.4-8.4	<2	Low-------	0.15			
	28-60	8-15	0.6-2.0	0.07-0.10	7.4-8.4	<4	Low-------	0.15			
Hades-----------	0-7	18-25	0.6-2.0	0.15-0.18	5.6-7.3	<2	Low-------	0.28	5	6	2-4
	7-60	24-35	0.2-0.6	0.15-0.18	5.6-8.4	<2	Moderate	0.32			
Ricrest---------	0-10	15-25	0.6-2.0	0.16-0.17	7.4-7.8	<2	Low-------	0.32	5	6	2-5
	10-24	24-32	0.6-2.0	0.17-0.18	7.4-7.8	<2	Moderate	0.24			
	24-60	20-30	0.6-2.0	0.15-0.17	7.4-8.4	<2	Moderate	0.24			
34*:											
Cedarhill-------	0-9	10-16	0.6-2.0	0.09-0.12	7.4-8.4	<2	Low-------	0.17	5	8	1-3
	9-28	10-17	0.6-2.0	0.08-0.12	7.4-8.4	<2	Low-------	0.15			
	28-60	8-15	0.6-2.0	0.07-0.11	7.4-8.4	<4	Low-------	0.20			
Hondoho---------	0-15	15-25	0.6-2.0	0.11-0.13	6.6-8.4	<2	Low-------	0.28	5	8	2-3
	15-60	18-30	0.6-2.0	0.08-0.10	7.9-8.4	<2	Low-------	0.10			
Arbone----------	0-9	13-18	0.6-2.0	0.12-0.15	7.4-8.4	<2	Low-------	0.28	5	5	1-3
	9-60	13-18	0.6-2.0	0.12-0.15	7.4-8.4	<2	Low-------	0.32			
35*:											
Cedarhill-------	0-9	10-16	0.6-2.0	0.09-0.12	7.4-8.4	<2	Low-------	0.17	5	8	1-3
	9-28	10-17	0.6-2.0	0.08-0.12	7.4-8.4	<2	Low-------	0.15			
	28-60	8-15	0.6-2.0	0.07-0.11	7.4-8.4	<4	Low-------	0.20			
Hondoho---------	0-15	15-25	0.6-2.0	0.11-0.13	6.6-8.4	<2	Low-------	0.28	5	8	2-3
	15-60	18-30	0.6-2.0	0.08-0.10	7.9-8.4	<2	Low-------	0.10			
Ridgecrest------	0-14	8-18	0.6-2.0	0.08-0.10	7.4-8.4	<2	Low-------	0.24	2	8	2-4
	14-27	8-18	0.6-2.0	0.05-0.08	7.4-8.4	<2	Low-------	0.20			
	27	---	---	---	---	---	----------	----			
36*:											
Cedarhill-------	0-9	10-16	0.6-2.0	0.09-0.12	7.4-8.4	<2	Low-------	0.17	5	8	1-3
	9-28	10-17	0.6-2.0	0.08-0.12	7.4-8.4	<2	Low-------	0.15			
	28-60	8-15	0.6-2.0	0.07-0.11	7.4-8.4	<4	Low-------	0.20			
Manila----------	0-7	18-27	0.6-2.0	0.16-0.18	6.1-7.3	<2	Moderate	0.43	5	6	2-4
	7-48	35-55	0.06-0.2	0.17-0.19	6.1-7.8	<2	High------	0.37			
	48-60	12-18	0.6-2.0	0.17-0.19	6.6-7.8	<2	Low-------	0.49			

See footnote at end of table.

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodibility group	Organic matter
	In	Pct	In/hr	In/in	pH	mmhos/cm					Pct
37*:											
Cedarhill-------	0-9	10-16	0.6-2.0	0.09-0.12	7.4-8.4	<2	Low--------	0.17	5	8	1-3
	9-28	10-17	0.6-2.0	0.08-0.12	7.4-8.4	<2	Low--------	0.15			
	28-60	8-15	0.6-2.0	0.07-0.11	7.4-8.4	<4	Low--------	0.20			
Trailcreek------	0-4	---	2.0-6.0	0.09-0.15	6.6-7.8	<2	Low--------	0.37	2	3	1-4
	4-26	---	2.0-6.0	0.07-0.13	6.6-8.4	<2	Low--------	0.49			
	26	---	---	---	---	---	----------	----			
Coalbank--------	0-33	---	2.0-6.0	0.09-0.15	6.6-7.8	<2	Low--------	0.37	5	3	1-4
	33-60	---	2.0-6.0	0.07-0.13	6.6-8.4	<2	Low--------	0.49			
38-------------- Coalbank	0-33	---	2.0-6.0	0.09-0.15	6.6-7.8	<2	Low--------	0.37	5	3	1-4
	33-60	---	2.0-6.0	0.07-0.13	6.6-8.4	<2	Low--------	0.49			
39*, 40*:											
Coalbank--------	0-33	---	2.0-6.0	0.09-0.15	6.6-7.8	<2	Low--------	0.37	5	3	1-4
	33-60	---	2.0-6.0	0.07-0.13	6.6-8.4	<2	Low--------	0.49			
Trailcreek------	0-4	---	2.0-6.0	0.09-0.15	6.6-7.8	<2	Low--------	0.37	2	3	1-4
	4-26	---	2.0-6.0	0.07-0.13	6.6-8.4	<2	Low--------	0.49			
	26	---	---	---	---	---	----------	----			
Lonigan---------	0-7	---	0.6-2.0	0.12-0.16	6.6-7.8	<2	Low--------	0.24	2	5	1-3
	7-12	---	2.0-6.0	0.09-0.13	7.4-8.4	<2	Low--------	0.20			
	12-27	---	2.0-6.0	0.08-0.11	7.4-8.4	<2	Low--------	0.15			
	27	---	---	---	---	---	----------	----			
41*:											
Downata---------	0-14	12-24	0.6-2.0	0.18-0.21	7.4-8.4	<4	Low--------	0.32	5	8	3-6
	14-40	28-34	0.2-0.6	0.17-0.20	7.4-8.4	<4	Moderate	0.43			
	40-60	18-27	0.6-2.0	0.17-0.20	7.4-8.4	<2	Low--------	0.43			
Bear Lake-------	0-12	18-27	0.6-2.0	0.19-0.21	7.4-8.4	2-4	Low--------	0.37	5	8	3-6
	12-60	18-34	0.2-0.6	0.19-0.21	7.4-9.0	2-8	Moderate	0.43			
42*, 43*:											
Downey----------	0-17	10-18	0.6-2.0	0.18-0.20	6.6-8.4	<2	Low--------	0.37	1	5	1-3
	17-60	0-5	>20	0.02-0.04	7.4-8.4	<2	Low--------	0.10			
Arimo-----------	0-18	10-18	0.6-2.0	0.18-0.20	6.6-7.8	<2	Low--------	0.37	2	5	1-3
	18-33	10-18	0.6-2.0	0.18-0.20	7.4-8.4	<2	Low--------	0.43			
	33-60	0-5	>20	0.02-0.04	7.4-8.4	<2	Low--------	0.10			
44*:											
Enochville------	0-12	15-25	0.6-2.0	0.19-0.21	6.1-7.3	<2	Low--------	0.32	5	5	4-6
	12-43	20-35	0.2-0.6	0.14-0.20	6.6-7.8	<2	Moderate	0.37			
	43-60	13-18	2.0-6.0	0.03-0.07	6.6-8.4	<2	Low--------	0.15			
Enochville Variant---------	0-11	12-17	0.6-2.0	0.13-0.18	6.6-7.8	<2	Low--------	0.28	5	5	4-6
	11-24	17-25	0.6-2.0	0.12-0.16	6.6-7.8	<2	Low--------	0.28			
	24-60	14-19	0.6-2.0	0.05-0.07	6.1-7.3	<2	Low--------	0.15			
45*:											
Greys-----------	0-19	12-15	0.6-2.0	0.19-0.21	5.6-7.3	<2	Low--------	0.43	5	5	2-4
	19-60	18-35	0.2-0.6	0.19-0.21	5.6-7.3	<2	Moderate	0.43			
Pavohroo--------	0-3	8-17	0.6-2.0	0.16-0.19	6.1-7.3	<2	Low--------	0.32	5	5	4-8
	3-26	18-25	0.6-2.0	0.16-0.19	6.1-7.3	<2	Low--------	0.37			
	26-60	18-25	0.6-2.0	0.12-0.16	6.6-8.4	<2	Low--------	0.28			
Sedgway---------	0-5	15-25	0.6-2.0	0.14-0.16	5.6-6.5	<2	Low--------	0.37	5	5	2-4
	5-21	15-25	0.6-2.0	0.09-0.11	5.6-6.5	<2	Low--------	0.20			
	21-60	27-34	0.2-0.6	0.08-0.10	5.6-6.5	<2	Moderate	0.20			

See footnote at end of table.

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodibility group	Organic matter
	In	Pct	In/hr	In/in	pH	mmhos/cm					Pct
46 Hades	0-7	18-25	0.6-2.0	0.15-0.18	5.6-7.3	<2	Low	0.28	5	6	2-4
	7-60	24-35	0.2-0.6	0.15-0.18	5.6-8.4	<2	Moderate	0.32			
47*:											
Hades	0-7	18-25	0.6-2.0	0.15-0.18	5.6-7.3	<2	Low	0.28	5	6	2-4
	7-60	24-35	0.2-0.6	0.15-0.18	5.6-8.4	<2	Moderate	0.32			
Camelback	0-21	12-18	0.6-2.0	0.11-0.15	6.1-7.3	<2	Low	0.32	5	5	2-4
	21-60	18-27	0.6-2.0	0.08-0.11	6.1-7.3	<2	Low	0.20			
Hondoho	0-15	15-25	0.6-2.0	0.11-0.13	6.6-8.4	<2	Low	0.28	5	8	2-3
	15-60	18-30	0.6-2.0	0.08-0.10	7.9-8.4	<2	Low	0.10			
48*:											
Hades	0-7	18-25	0.6-2.0	0.15-0.18	5.6-7.3	<2	Low	0.28	5	6	2-4
	7-60	24-35	0.2-0.6	0.15-0.18	5.6-8.4	<2	Moderate	0.32			
Holmes	0-16	10-20	0.6-2.0	0.05-0.08	6.6-7.3	<2	Low	0.15	1	8	2-4
	16-28	15-30	0.6-2.0	0.06-0.09	6.6-7.3	<2	Low	0.10			
	28-60	2-5	6.0-20	0.02-0.04	6.1-6.5	<2	Low	0.05			
49*:											
Hades	0-7	18-25	0.6-2.0	0.15-0.18	5.6-7.3	<2	Low	0.28	5	6	2-4
	7-60	24-35	0.2-0.6	0.15-0.18	5.6-8.4	<2	Moderate	0.32			
Lanoak	0-22	10-20	0.6-2.0	0.19-0.21	6.1-7.8	<2	Low	0.37	5	5	3-5
	22-60	18-27	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.49			
50*:											
Hades	0-7	18-25	0.6-2.0	0.15-0.18	5.6-7.3	<2	Low	0.28	5	6	2-4
	7-60	24-35	0.2-0.6	0.15-0.18	5.6-8.4	<2	Moderate	0.32			
Lanoak	0-22	10-20	0.6-2.0	0.19-0.21	6.1-7.8	<2	Low	0.37	5	5	3-5
	22-60	18-27	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.49			
Camelback	0-21	12-18	0.6-2.0	0.11-0.15	6.1-7.3	<2	Low	0.32	3	5	2-4
	21-42	18-27	0.6-2.0	0.08-0.11	6.1-7.3	<2	Low	0.20			
	42	---	---	---	---	---	----------	----			
51*:											
Harkness	0-8	15-20	0.6-2.0	0.15-0.19	5.1-6.0	<2	Low	0.37	2	5	2-5
	8-14	15-25	0.6-2.0	0.11-0.17	5.1-6.0	<2	Low	0.24			
	14-60	35-55	0.06-0.2	0.13-0.18	4.5-6.5	<2	High	0.28			
Sedgway	0-5	15-25	0.6-2.0	0.14-0.16	5.6-6.5	<2	Low	0.37	5	5	2-4
	5-21	15-25	0.6-2.0	0.09-0.11	5.6-6.5	<2	Low	0.20			
	21-60	27-34	0.2-0.6	0.08-0.10	5.6-6.5	<2	Moderate	0.20			
Mikesell	0-11	15-25	0.6-2.0	0.16-0.18	5.1-6.5	<2	Low	0.37	5	6	.5-1
	11-31	40-55	0.06-0.2	0.13-0.15	5.1-6.5	<2	High	0.20			
	31-60	40-55	0.06-0.2	0.09-0.12	5.1-6.5	<2	High	0.10			
52 Holmes	0-16	15-25	0.6-2.0	0.10-0.13	6.6-7.3	<2	Low	0.15	1	8	2-4
	16-28	15-30	0.6-2.0	0.06-0.09	6.6-7.3	<2	Low	0.10			
	28-60	2-5	6.0-20	0.02-0.04	6.1-6.5	<2	Low	0.05			
53*:											
Hondoho	0-15	12-25	0.6-2.0	0.13-0.14	7.4-8.4	<2	Low	0.28	2	6	2-3
	15-60	18-27	0.6-2.0	0.08-0.11	7.9-8.4	<2	Low	0.17			
Arbone	0-9	13-18	0.6-2.0	0.12-0.15	7.4-8.4	<2	Low	0.28	5	5	1-3
	9-60	13-18	0.6-2.0	0.12-0.15	7.4-8.4	<2	Low	0.32			

See footnote at end of table.

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodibility group	Organic matter
	In	Pct	In/hr	In/in	pH	mmhos/cm					Pct
54*:											
Hondoho	0-15	15-25	0.6-2.0	0.11-0.13	6.6-8.4	<2	Low	0.28	5	8	2-3
	15-60	18-30	0.6-2.0	0.08-0.10	7.9-8.4	<2	Low	0.10			
Arbone	0-9	13-18	0.6-2.0	0.12-0.15	7.4-8.4	<2	Low	0.28	5	5	1-3
	9-60	13-18	0.6-2.0	0.12-0.15	7.4-8.4	<2	Low	0.32			
Ririe	0-12	15-18	0.6-2.0	0.19-0.21	6.6-8.4	<2	Low	0.43	5	5	2-4
	12-60	12-18	0.6-2.0	0.19-0.21	7.4-9.0	<2	Low	0.55			
55*:											
Hondoho	0-15	15-25	0.6-2.0	0.11-0.13	6.6-8.4	<2	Low	0.28	5	8	2-3
	15-60	18-30	0.6-2.0	0.08-0.10	7.9-8.4	<2	Low	0.10			
Hades	0-7	18-25	0.6-2.0	0.15-0.18	5.6-7.3	<2	Low	0.28	5	6	2-4
	7-60	24-35	0.2-0.6	0.15-0.18	5.6-8.4	<2	Moderate	0.32			
56*:											
Hondoho	0-15	15-25	0.6-2.0	0.11-0.13	6.6-8.4	<2	Low	0.28	5	8	2-3
	15-60	18-30	0.6-2.0	0.08-0.10	7.9-8.4	<2	Low	0.10			
Lanoak	0-22	10-20	0.6-2.0	0.19-0.21	6.1-7.8	<2	Low	0.37	5	5	3-5
	22-60	18-27	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.49			
Camelback	0-21	12-18	0.6-2.0	0.11-0.15	6.1-7.3	<2	Low	0.32	5	5	2-4
	21-60	18-27	0.6-2.0	0.08-0.11	6.1-7.3	<2	Low	0.20			
57, 58	0-7	12-20	0.6-2.0	0.19-0.22	7.4-8.4	<4	Low	0.37	5	4L	3-6
Inkom	7-60	18-27	0.6-2.0	0.18-0.21	7.4-8.4	<4	Low	0.43			
59*:											
Ireland	0-7	10-16	0.6-2.0	0.07-0.09	6.6-7.8	<2	Low	0.28	2	8	1-3
	7-30	16-22	0.6-2.0	0.05-0.07	7.4-8.4	<2	Low	0.20			
	30	---	---	---	---	---	---	---			
Camelback	0-21	12-18	0.6-2.0	0.11-0.15	6.1-7.3	<2	Low	0.24	3	8	2-4
	21-42	18-27	0.6-2.0	0.08-0.11	6.1-7.3	<2	Low	0.20			
	42	---	---	---	---	---	---	---			
Rock outcrop.											
60*:											
Ireland	0-7	10-16	0.6-2.0	0.07-0.09	6.6-7.8	<2	Low	0.28	2	8	1-3
	7-30	16-22	0.6-2.0	0.05-0.07	7.4-8.4	<2	Low	0.20			
	30	---	---	---	---	---	---	---			
Dateman	0-9	15-25	0.6-2.0	0.12-0.16	6.1-7.3	<2	Low	0.20	2	5	3-5
	9-35	18-25	0.6-2.0	0.08-0.12	6.6-7.8	<2	Low	0.10			
	35	---	---	---	---	---	---	---			
Pavohroo	0-3	8-17	0.6-2.0	0.16-0.19	6.1-7.3	<2	Low	0.32	5	5	4-8
	3-26	18-25	0.6-2.0	0.16-0.19	6.1-7.3	<2	Low	0.37			
	26-60	18-25	0.6-2.0	0.12-0.16	6.6-8.4	<2	Low	0.28			
61*:											
Ireland	0-7	10-16	0.6-2.0	0.07-0.09	6.6-7.8	<2	Low	0.28	2	8	1-3
	7-30	16-22	0.6-2.0	0.05-0.07	7.4-8.4	<2	Low	0.20			
	30	---	---	---	---	---	---	---			
Hades	0-7	18-25	0.6-2.0	0.15-0.18	5.6-7.3	<2	Low	0.28	5	6	2-4
	7-60	24-35	0.2-0.6	0.15-0.18	5.6-8.4	<2	Moderate	0.32			

See footnote at end of table.

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	In/hr	In/in	pH	mmhos/cm					Pct
61*:											
Cedarhill--------	0-9	10-16	0.6-2.0	0.09-0.12	7.4-8.4	<2	Low--------	0.17	5	8	1-3
	9-28	10-17	0.6-2.0	0.08-0.12	7.4-8.4	<2	Low--------	0.15			
	28-60	8-15	0.6-2.0	0.07-0.11	7.4-8.4	<4	Low--------	0.20			
62, 63------------ Joes	0-13	12-18	0.6-2.0	0.19-0.21	6.6-7.8	<2	Low--------	0.43	5	4L	1-2
	13-60	18-24	0.6-2.0	0.19-0.21	7.4-8.4	<2	Low--------	0.49			
64---------------- Joevar	0-4	15-18	0.6-2.0	0.19-0.21	6.6-7.8	<2	Low--------	0.37	5	5	2-4
	4-60	15-18	0.6-2.0	0.19-0.21	7.4-8.4	<2	Low--------	0.43			
65, 66, 67, 68--- Lanoak	0-22	10-20	0.6-2.0	0.19-0.21	6.1-7.8	<2	Low--------	0.37	5	5	3-5
	22-60	18-27	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.49			
69*:											
Lanoak-----------	0-22	10-20	0.6-2.0	0.19-0.21	6.1-7.8	<2	Low--------	0.37	5	5	3-5
	22-60	18-27	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.49			
Camelback--------	0-21	12-18	0.6-2.0	0.11-0.15	6.1-7.3	<2	Low--------	0.32	3	5	2-4
	21-42	18-27	0.6-2.0	0.08-0.11	6.1-7.3	<2	Low--------	0.20			
	42	---	---	---	---	---	-----------	----			
70*, 71*:											
Lanoak-----------	0-22	10-20	0.6-2.0	0.19-0.21	6.1-7.8	<2	Low--------	0.37	5	5	3-5
	22-60	18-27	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.49			
Greys------------	0-19	12-15	0.6-2.0	0.19-0.21	5.6-7.3	<2	Low--------	0.43	5	5	2-4
	19-60	18-35	0.2-0.6	0.19-0.21	5.6-7.3	<2	Moderate	0.43			
72*:											
Lanoak-----------	0-22	10-20	0.6-2.0	0.19-0.21	6.1-7.8	<2	Low--------	0.37	5	5	3-5
	22-60	18-27	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.49			
Hades------------	0-7	18-25	0.6-2.0	0.15-0.18	5.6-7.3	<2	Low--------	0.28	5	6	2-4
	7-60	24-35	0.2-0.6	0.15-0.18	5.6-8.4	<2	Moderate	0.32			
73*:											
Lanoak-----------	0-22	10-20	0.6-2.0	0.19-0.21	6.1-7.8	<2	Low--------	0.37	5	5	3-5
	22-60	18-27	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.49			
Watercanyon------	0-7	10-18	0.6-2.0	0.16-0.20	7.4-7.8	<2	Low--------	0.49	5	5	1-2
	7-16	10-18	0.6-2.0	0.16-0.20	7.4-8.4	<2	Low--------	0.55			
	16-60	5-16	0.6-2.0	0.14-0.18	7.9-9.0	2-4	Low--------	0.55			
Rexburg----------	0-10	12-18	0.6-2.0	0.19-0.21	6.1-7.8	<2	Low--------	0.43	5	5	1-3
	10-26	14-18	0.6-2.0	0.19-0.21	6.6-7.8	<2	Low--------	0.49			
	26-60	10-16	0.6-2.0	0.19-0.21	7.4-8.4	<2	Low--------	0.55			
74*: Lava flows.											
McCarey----------	0-12	10-20	0.6-2.0	0.16-0.21	6.1-7.8	<2	Low--------	0.43	2	5	1-3
	12-17	20-34	0.2-0.6	0.19-0.21	6.6-8.4	<2	Moderate	0.32			
	17-28	15-25	0.6-2.0	0.16-0.21	6.6-8.4	<2	Low--------	0.43			
	28	---	---	---	---	---	-----------	----			
McCarey Variant-	0-8	15-20	0.6-2.0	0.07-0.11	6.1-7.3	<2	Low--------	0.28	1	8	1-3
	8-13	20-27	0.6-2.0	0.07-0.11	6.1-7.3	<2	Low--------	0.28			
	13	---	---	---	---	---	-----------	----			
75*:											
Manila-----------	0-7	18-27	0.6-2.0	0.16-0.18	6.1-7.3	<2	Moderate	0.43	5	6	2-4
	7-48	35-55	0.06-0.2	0.17-0.19	6.1-7.8	<2	High-------	0.37			
	48-60	12-18	0.6-2.0	0.17-0.19	6.6-7.8	<2	Low--------	0.49			

See footnote at end of table.

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	In/hr	In/in	pH	mmhos/cm					Pct
75*:											
Bancroft--------	0-7	15-20	0.6-2.0	0.19-0.21	6.1-7.3	<2	Low-------	0.43	5	5	2-3
	7-37	18-32	0.6-2.0	0.19-0.21	6.1-7.8	<2	Low-------	0.43			
	37-60	10-20	0.6-2.0	0.19-0.21	7.4-9.0	<2	Low-------	0.55			
76*:											
Manila----------	0-7	18-27	0.6-2.0	0.16-0.18	6.1-7.3	<2	Moderate	0.43	5	6	2-4
	7-48	35-55	0.06-0.2	0.17-0.19	6.1-7.8	<2	High------	0.37			
	48-60	12-18	0.6-2.0	0.17-0.19	6.6-7.8	<2	Low-------	0.49			
Cedarhill-------	0-9	10-16	0.6-2.0	0.09-0.12	7.4-8.4	<2	Low-------	0.17	5	8	1-3
	9-28	10-17	0.6-2.0	0.08-0.12	7.4-8.4	<2	Low-------	0.15			
	28-60	8-15	0.6-2.0	0.07-0.11	7.4-8.4	<4	Low-------	0.20			
77*:											
McDole----------	0-21	8-18	0.6-2.0	0.19-0.21	7.4-8.4	<2	Low-------	0.43	5	4L	1-3
	21-60	8-18	0.6-2.0	0.19-0.21	7.4-9.0	<2	Low-------	0.49			
McDole Variant--	0-34	10-18	0.6-2.0	0.19-0.21	7.4-8.4	<2	Low-------	0.43	5	4L	2-4
	34-60	10-18	0.6-2.0	0.14-0.17	7.4-8.4	<2	Low-------	0.49			
78--------------- Moonlight	0-24	12-18	0.6-2.0	0.19-0.21	5.6-7.3	<2	Low-------	0.32	5	5	4-6
	24-60	12-18	0.6-2.0	0.19-0.21	5.6-7.3	<2	Low-------	0.37			
79*:											
Moonlight-------	0-24	12-18	0.6-2.0	0.19-0.21	5.6-7.3	<2	Low-------	0.32	5	5	4-6
	24-60	12-18	0.6-2.0	0.19-0.21	5.6-7.3	<2	Low-------	0.37			
Camelback-------	0-21	12-18	0.6-2.0	0.11-0.15	6.1-7.3	<2	Low-------	0.32	3	5	2-4
	21-42	18-27	0.6-2.0	0.08-0.11	6.1-7.3	<2	Low-------	0.20			
	42	---	---	---	---	---	-----------	----			
80*:											
Moonlight-------	0-24	12-18	0.6-2.0	0.19-0.21	5.6-7.3	<2	Low-------	0.32	5	5	4-6
	24-60	12-18	0.6-2.0	0.19-0.21	5.6-7.3	<2	Low-------	0.37			
Pavohroo--------	0-3	8-17	0.6-2.0	0.16-0.19	6.1-7.3	<2	Low-------	0.32	5	5	4-8
	3-26	18-25	0.6-2.0	0.16-0.19	6.1-7.3	<2	Low-------	0.37			
	26-60	18-25	0.6-2.0	0.12-0.16	6.6-8.4	<2	Low-------	0.28			
81--------------- Oxford	0-5	35-42	0.06-0.2	0.14-0.17	7.4-7.8	<2	High------	0.32	5	4	1-2
	5-63	40-58	<0.06	0.14-0.16	7.4-8.4	2-4	High------	0.37			
82*:											
Oxford----------	0-5	35-42	0.06-0.2	0.14-0.17	7.4-7.8	<2	High------	0.32	5	4	1-2
	5-63	40-58	<0.06	0.14-0.16	7.4-8.4	2-4	High------	0.37			
Banida----------	0-6	32-39	0.06-0.2	0.14-0.18	7.4-8.4	<2	Moderate	0.32	5	4	1-2
	6-64	40-55	<0.06	0.14-0.16	7.4-8.4	2-4	High------	0.37			
83*:											
Pavohroo--------	0-3	8-17	0.6-2.0	0.16-0.19	6.1-7.3	<2	Low-------	0.32	5	5	4-8
	3-26	18-25	0.6-2.0	0.16-0.19	6.1-7.3	<2	Low-------	0.37			
	26-60	18-25	0.6-2.0	0.12-0.16	6.6-8.4	<2	Low-------	0.28			
Moonlight-------	0-24	12-18	0.6-2.0	0.19-0.21	5.6-7.3	<2	Low-------	0.32	5	5	4-6
	24-60	12-18	0.6-2.0	0.19-0.21	5.6-7.3	<2	Low-------	0.37			
84*:											
Pavohroo--------	0-3	8-17	0.6-2.0	0.16-0.19	6.1-7.3	<2	Low-------	0.32	5	5	4-8
	3-26	18-25	0.6-2.0	0.16-0.19	6.1-7.3	<2	Low-------	0.37			
	26-60	18-25	0.6-2.0	0.12-0.16	6.6-8.4	<2	Low-------	0.28			

See footnote at end of table.

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodibility group	Organic matter
	In	Pct	In/hr	In/in	pH	mmhos/cm					Pct
84*:											
Sedgway---------	0-5	15-25	0.6-2.0	0.14-0.16	5.6-6.5	<2	Low--------	0.37	5	5	2-4
	5-21	15-25	0.6-2.0	0.09-0.11	5.6-6.5	<2	Low--------	0.20			
	21-60	27-34	0.2-0.6	0.08-0.10	5.6-6.5	<2	Moderate	0.20			
Toponce---------	0-3	15-25	0.6-2.0	0.19-0.21	5.6-6.5	<2	Low--------	0.37	5	6	4-6
	3-14	20-30	0.2-0.6	0.18-0.21	5.6-6.5	<2	Low--------	0.37			
	14-60	35-55	0.06-0.2	0.16-0.18	5.6-6.5	<2	High-------	0.32			
85*, 86*. Pits											
87, 88, 89, 90, 91-------------- Pocatello	0-8	5-15	0.6-2.0	0.19-0.21	6.6-8.4	<2	Low--------	0.49	5	4L	.8-1
	8-40	5-15	0.6-2.0	0.19-0.21	7.9-9.0	2-4	Low--------	0.55			
	40-60	5-15	0.6-2.0	0.19-0.21	>7.8	8-16	Low--------	0.55			
92*:											
Portino---------	0-9	8-18	0.6-2.0	0.17-0.21	7.4-9.0	<2	Low--------	0.49	2	5	.5-1
	9-29	8-18	0.6-2.0	0.17-0.21	7.4-9.0	<2	Low--------	0.49			
	29	---	---	---	---	---	-----------	----			
Thornock--------	0-2	8-18	0.6-2.0	0.14-0.16	7.4-8.4	<2	Low--------	0.28	1	8	.5-1
	2-14	8-18	0.6-2.0	0.16-0.18	7.4-8.4	<2	Low--------	0.43			
	14	---	---	---	---	---	-----------	----			
93, 94, 95, 96--- Rexburg	0-10	12-18	0.6-2.0	0.19-0.21	6.1-7.8	<2	Low--------	0.43	5	5	1-3
	10-26	14-18	0.6-2.0	0.19-0.21	6.6-7.8	<2	Low--------	0.49			
	26-60	10-16	0.6-2.0	0.19-0.21	7.4-8.4	<2	Low--------	0.55			
97, 98, 99-------- Ririe	0-12	15-18	0.6-2.0	0.19-0.21	6.6-8.4	<2	Low--------	0.43	5	5	2-4
	12-60	12-18	0.6-2.0	0.19-0.21	7.4-9.0	<2	Low--------	0.55			
100*, 101*, 102*:											
Ririe-----------	0-12	15-18	0.6-2.0	0.19-0.21	6.6-8.4	<2	Low--------	0.43	5	5	2-4
	12-60	12-18	0.6-2.0	0.19-0.21	7.4-9.0	<2	Low--------	0.55			
Watercanyon-----	0-7	10-18	0.6-2.0	0.16-0.20	7.4-7.8	<2	Low--------	0.49	5	5	1-2
	7-16	10-18	0.6-2.0	0.16-0.20	7.4-8.4	<2	Low--------	0.55			
	16-60	5-16	0.6-2.0	0.14-0.18	7.9-9.0	2-4	Low--------	0.55			
103*:											
Ririe-----------	0-12	15-18	0.6-2.0	0.19-0.21	6.6-8.4	<2	Low--------	0.43	5	5	2-4
	12-60	12-18	0.6-2.0	0.19-0.21	7.4-9.0	<2	Low--------	0.55			
Watercanyon-----	0-7	10-18	0.6-2.0	0.16-0.20	7.4-7.8	<2	Low--------	0.49	5	5	1-2
	7-16	10-18	0.6-2.0	0.16-0.20	7.4-8.4	<2	Low--------	0.55			
	16-60	5-16	0.6-2.0	0.14-0.18	7.9-9.0	2-4	Low--------	0.55			
Cedarhill-------	0-9	10-16	0.6-2.0	0.09-0.12	7.4-8.4	<2	Low--------	0.17	5	8	1-3
	9-28	10-17	0.6-2.0	0.08-0.12	7.4-8.4	<2	Low--------	0.15			
	28-60	8-15	0.6-2.0	0.07-0.11	7.4-8.4	<4	Low--------	0.20			
104*. Rock outcrop											
105*: Rubble land.											
Haploxerolls.											
106*:											
Scout Variant---	0-3	10-20	0.6-2.0	0.14-0.16	5.1-6.5	<2	Low--------	0.32	5	5	3-5
	3-16	10-20	0.6-2.0	0.09-0.11	5.1-6.5	<2	Low--------	0.17			
	16-60	10-20	0.6-2.0	0.07-0.09	5.1-6.5	<2	Low--------	0.17			

See footnote at end of table.

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	In/hr	In/in	pH	mmhos/cm					Pct
106*:											
Camelback											
Variant--------	0-10	10-20	0.6-2.0	0.13-0.15	6.1-7.3	<2	Low-------	0.24	5	5	3-5
	10-60	10-25	0.6-2.0	0.08-0.11	6.1-7.3	<2	Low-------	0.15			
107*:											
Sedgway---------	0-5	15-25	0.6-2.0	0.14-0.16	5.6-6.5	<2	Low-------	0.37	5	5	2-4
	5-21	15-25	0.6-2.0	0.09-0.11	5.6-6.5	<2	Low-------	0.20			
	21-60	27-34	0.2-0.6	0.08-0.10	5.6-6.5	<2	Moderate	0.20			
Beaverdam-------	0-12	15-25	0.6-2.0	0.17-0.20	5.6-7.3	<2	Low-------	0.37	2	5	1-3
	12-65	35-45	0.06-0.2	0.15-0.19	6.1-7.3	<2	Moderate	0.32			
108*.											
Slickens											
109*:											
Swanner---------	0-9	12-22	0.6-2.0	0.07-0.08	7.4-8.4	<2	Low-------	0.20	1	5	---
	9-17	12-22	0.6-2.0	0.05-0.06	7.4-8.4	<2	Low-------	0.05			
	17	---	---	---	---	---	----------	----			
Hondoho---------	0-15	15-25	0.6-2.0	0.11-0.13	6.6-8.4	<2	Low-------	0.28	5	8	2-3
	15-60	18-30	0.6-2.0	0.08-0.10	7.9-8.4	<2	Low-------	0.10			
110*:											
Swanner---------	0-9	12-22	0.6-2.0	0.07-0.08	7.4-8.4	<2	Low-------	0.20	1	5	---
	9-17	12-22	0.6-2.0	0.05-0.06	7.4-8.4	<2	Low-------	0.05			
	17	---	---	---	---	---	----------	----			
Rock outcrop.											
111--------------	0-2	8-18	0.6-2.0	0.17-0.20	6.6-7.8	<2	Low-------	0.37	5	8	2-4
Tendoy	2-10	---	0.6-2.0	0.22-0.30	6.1-7.8	<2	High------	----			
	10-60	---	0.6-2.0	0.22-0.30	5.6-6.5	<2	High------	----			
112*:											
Toponce---------	0-3	15-25	0.6-2.0	0.19-0.21	5.6-6.5	<2	Low-------	0.37	5	6	4-6
	3-14	20-30	0.2-0.6	0.18-0.21	5.6-6.5	<2	Low-------	0.37			
	14-60	35-55	0.06-0.2	0.16-0.18	5.6-6.5	<2	High------	0.32			
Broadhead-------	0-2	15-25	0.6-2.0	0.18-0.20	5.6-6.5	<2	Low-------	0.28	2	6	2-4
	2-9	25-35	0.2-0.6	0.18-0.20	6.1-7.3	<2	Moderate	0.28			
	9-60	35-50	0.06-0.2	0.16-0.18	6.1-7.3	<2	High------	0.24			
113*, 114*:											
Urban land.											
Bahem-----------	0-11	8-18	0.6-2.0	0.19-0.21	7.4-7.8	<2	Low-------	0.43	3	4L	.8-2
	11-49	8-18	0.6-2.0	0.19-0.21	7.4-8.4	<2	Low-------	0.55			
	49-60	<5	>20	0.03-0.05	---	<2	Low-------	0.10			
Broxon----------	0-8	8-18	0.6-2.0	0.19-0.21	7.4-8.4	<2	Low-------	0.43	2	4L	.8-2
	8-25	8-18	0.6-2.0	0.19-0.21	7.4-8.4	<2	Low-------	0.55			
	25-60	0-5	>20	0.03-0.05	7.4-8.4	<2	Low-------	0.05			
115--------------	0-9	13-20	0.6-2.0	0.10-0.15	6.1-7.3	<2	Low-------	0.24	2	8	2-4
Valmar	9-14	20-27	0.6-2.0	0.10-0.15	6.6-7.8	<2	Moderate	0.20			
	14-24	20-27	0.6-2.0	0.07-0.12	6.6-7.8	<2	Moderate	0.17			
	24	---	---	---	---	---	----------	----			
116*:											
Valmar----------	0-9	13-20	0.6-2.0	0.10-0.15	6.1-7.3	<2	Low-------	0.24	2	8	2-4
	9-14	20-27	0.6-2.0	0.10-0.15	6.6-7.8	<2	Moderate	0.20			
	14-24	20-27	0.6-2.0	0.07-0.12	6.6-7.8	<2	Moderate	0.17			
	24	---	---	---	---	---	----------	----			

See footnote at end of table.

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodibility group	Organic matter
	In	Pct	In/hr	In/in	pH	mmhos/cm					Pct
116*:											
Camelback	0-21	12-18	0.6-2.0	0.11-0.15	6.1-7.3	<2	Low	0.32	3	5	2-4
	21-42	18-27	0.6-2.0	0.08-0.11	6.1-7.3	<2	Low	0.20			
	42	---	---	---	---	---	---	---			
Hades	0-7	18-25	0.6-2.0	0.15-0.18	5.6-7.3	<2	Low	0.28	5	6	2-4
	7-60	24-35	0.2-0.6	0.15-0.18	5.6-8.4	<2	Moderate	0.32			
117*:											
Valmar	0-9	13-20	0.6-2.0	0.09-0.14	6.1-7.3	<2	Low	0.24	2	8	2-4
	9-14	20-27	0.6-2.0	0.10-0.15	6.6-7.8	<2	Moderate	0.20			
	14-24	20-27	0.6-2.0	0.07-0.12	6.6-7.8	<2	Moderate	0.17			
	24	---	---	---	---	---	---	---			
Hades	0-7	18-25	0.6-2.0	0.15-0.18	5.6-7.3	<2	Low	0.28	5	6	2-4
	7-60	24-35	0.2-0.6	0.15-0.18	5.6-8.4	<2	Moderate	0.32			
118*:											
Valmar	0-9	13-20	0.6-2.0	0.09-0.14	6.1-7.3	<2	Low	0.24	2	8	2-4
	9-14	20-27	0.6-2.0	0.10-0.15	6.6-7.8	<2	Moderate	0.20			
	14-24	20-27	0.6-2.0	0.07-0.12	6.6-7.8	<2	Moderate	0.17			
	24	---	---	---	---	---	---	---			
Rock outcrop.											
119*:											
Valmar	0-9	13-20	0.6-2.0	0.10-0.15	6.1-7.3	<2	Low	0.24	2	8	2-4
	9-14	20-27	0.6-2.0	0.10-0.15	6.6-7.8	<2	Moderate	0.20			
	14-24	20-27	0.6-2.0	0.07-0.12	6.6-7.8	<2	Moderate	0.17			
	24	---	---	---	---	---	---	---			
Watercanyon	0-7	10-18	0.6-2.0	0.16-0.20	7.4-7.8	<2	Low	0.49	5	5	1-2
	7-16	10-18	0.6-2.0	0.16-0.20	7.4-8.4	<2	Low	0.55			
	16-60	5-16	0.6-2.0	0.14-0.18	7.9-9.0	2-4	Low	0.55			
Hondoho	0-15	15-25	0.6-2.0	0.11-0.13	6.6-8.4	<2	Low	0.28	5	8	2-3
	15-60	18-30	0.6-2.0	0.08-0.10	7.9-8.4	<2	Low	0.10			
120 Watercanyon	0-7	10-18	0.6-2.0	0.16-0.20	7.4-7.8	<2	Low	0.49	5	5	1-2
	7-16	10-18	0.6-2.0	0.16-0.20	7.4-8.4	<2	Low	0.55			
	16-60	5-16	0.6-2.0	0.14-0.18	7.9-9.0	2-4	Low	0.55			
121*:											
Watercanyon	0-7	10-18	0.6-2.0	0.16-0.20	7.4-7.8	<2	Low	0.49	5	5	1-2
	7-16	10-18	0.6-2.0	0.16-0.20	7.4-8.4	<2	Low	0.55			
	16-60	5-16	0.6-2.0	0.14-0.18	7.9-9.0	2-4	Low	0.55			
Swanner	0-9	12-22	0.6-2.0	0.07-0.08	7.4-8.4	<2	Low	0.20	1	5	---
	9-17	12-22	0.6-2.0	0.05-0.06	7.4-8.4	<2	Low	0.05			
	17	---	---	---	---	---	---	---			
Rock outcrop.											
122 Wursten	0-9	13-18	0.6-2.0	0.13-0.17	7.4-8.4	<2	Low	0.32	5	4L	1-2
	9-60	13-18	0.6-2.0	0.11-0.16	7.9-9.0	2-4	Low	0.28			
123*:											
Wursten	0-9	13-18	0.6-2.0	0.13-0.17	7.4-8.4	<2	Low	0.32	5	4L	1-2
	9-60	13-18	0.6-2.0	0.11-0.16	7.9-9.0	2-4	Low	0.28			
Watercanyon Variant	0-4	12-18	0.6-2.0	0.15-0.18	7.4-8.4	4-8	Low	0.49	1	4L	1-2
	4-60	12-18	0.6-2.0	0.05-0.11	7.4-8.4	>16	Low	0.55			
Hondoho	0-15	15-25	0.6-2.0	0.11-0.13	6.6-8.4	<2	Low	0.28	5	8	2-3
	15-60	18-30	0.6-2.0	0.08-0.10	7.9-8.4	<2	Low	0.10			

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 18.--SOIL AND WATER FEATURES

["Flooding" and "water table" and terms such as "rare," "brief," and "apparent," are explained in the text. The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated]

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
1, 2--------------- Arbone	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High------	Low.
3*:												
Arbone-----------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High------	Low.
Hondoho----------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High------	Low.
4*:												
Arbone-----------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High------	Low.
McCarey----------	C	None---------	---	---	>6.0	---	---	20-40	Hard	Moderate	High------	Low.
Lava flows.												
5*:												
Arbone-----------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High------	Low.
Rubble land.												
6----------------- Arimo	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High------	Low.
7, 8-------------- Bahem	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High------	Low.
9, 10------------- Bancroft	B	None---------	---	---	>6.0	---	---	>60	---	High------	High------	Low.
11*:												
Bancroft---------	B	None---------	---	---	>6.0	---	---	>60	---	High------	High------	Low.
Manila-----------	C	None---------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Low.
12---------------- Banida	D	None---------	---	---	>6.0	---	---	>60	---	Moderate	High------	Low.
13*:												
Bear Lake--------	D	Frequent----	Brief-----	Jan-Jun	0-1.5	Apparent	Feb-Jun	>60	---	High------	High------	Low.
Bear Lake Variant	D	Frequent----	Brief-----	Jan-Jun	0-1.5	Apparent	Feb-Jun	20-40	Soft	High------	High------	Low.

See footnotes at end of table.

TABLE 18.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
14*:												
Broadhead--------	C	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
Hades------------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
Yago-------------	C	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
15*, 16*:												
Broadhead--------	C	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
Yago-------------	C	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
17, 18------------ Broncho	B	None--------	---	---	>6.0	---	---	>60	---	Low------	High-----	Low.
19*:												
Broncho Variant--	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Pocatello--------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
20*:												
Broncho Variant--	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Ririe------------	B	None--------	---	---	>6.0	---	---	>60	---	High-----	High-----	Low.
Pocatello--------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
21, 22------------ Broxon	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
23*:												
Camelback--------	B	None--------	---	---	>6.0	---	---	40-60	Hard	Moderate	Moderate	Low.
Cedarhill--------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Lanoak-----------	B	None--------	---	---	>6.0	---	---	>60	---	High-----	Moderate	Low.
24*:												
Camelback--------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Low.
Greys------------	B	None--------	---	---	>6.0	---	---	>60	---	High-----	Moderate	Moderate.
25*:												
Camelback--------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Low.
Hades------------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.

See footnotes at end of table.

TABLE 18.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
26*:												
Camelback--------	B	None--------	---	---	>6.0	---	---	40-60	Hard	Moderate	Moderate	Low.
Valmar-----------	C	None--------	---	---	>6.0	---	---	20-40	Hard	Moderate	Moderate	Low.
Hades------------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
27*:												
Camelback Variant	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Low.
Valmar Variant---	B	None--------	---	---	>6.0	---	---	20-40	Hard	Moderate	Moderate	Low.
28---------------- Cedarhill	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
29*:												
Cedarhill--------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Ireland----------	C	None--------	---	---	>6.0	---	---	20-40	Hard	Moderate	High-----	Low.
Rock outcrop.												
30*:												
Cedarhill--------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Ririe------------	B	None--------	---	---	>6.0	---	---	>60	---	High-----	High-----	Low.
Watercanyon------	B	None--------	---	---	>6.0	---	---	>60	---	High-----	High-----	Low.
31*:												
Cedarhill--------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Rock outcrop.												
32*:												
Cedarhill--------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Camelback--------	B	None--------	---	---	>6.0	---	---	40-60	Hard	Moderate	Moderate	Low.
Moonlight--------	B	None--------	---	---	>6.0	---	---	>60	---	High-----	Moderate	Moderate.
33*:												
Cedarhill--------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Hades------------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.

See footnotes at end of table.

TABLE 18.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
33*:												
Ricrest-----------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
34*:												
Cedarhill---------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Hondoho-----------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Arbone------------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
35*:												
Cedarhill---------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Hondoho-----------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Ridgecrest--------	C	None---------	---	---	>6.0	---	---	20-40	Hard	Moderate	High-----	Low.
36*:												
Cedarhill---------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Manila------------	C	None---------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Low.
37*:												
Cedarhill---------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Trailcreek--------	C	None---------	---	---	>6.0	---	---	20-40	Soft	High-----	High-----	Low.
Coalbank----------	B	None---------	---	---	>6.0	---	---	>60	---	High-----	High-----	Low.
38----------------- Coalbank	B	None---------	---	---	>6.0	---	---	>60	---	High-----	High-----	Low.
39*, 40*:												
Coalbank----------	B	None---------	---	---	>6.0	---	---	>60	---	High-----	High-----	Low.
Trailcreek--------	C	None---------	---	---	>6.0	---	---	20-40	Soft	High-----	High-----	Low.
Lonigan-----------	C	None---------	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
41*:												
Downata-----------	D	Frequent----	Brief-----	Jan-Jun	0-1.5	Apparent	Jan-Jun	>60	---	High-----	High-----	Low.
Bear Lake---------	D	Frequent----	Brief-----	Jan-Jun	0-1.5	Apparent	Feb-Jun	>60	---	High-----	High-----	Low.
42*, 43*:												
Downey------------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.

See footnotes at end of table.

TABLE 18.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
42*, 43*:												
Arimo------------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
44*:												
Enochville--------	D	Frequent----	Brief-----	Feb-Jun	1.0-2.0	Apparent	Apr-Jun	>60	---	High-----	High-----	Low.
Enochville Variant---------	D	Frequent----	Brief-----	Feb-Jun	1.0-2.0	Apparent	Apr-Jun	>60	---	High-----	Moderate	Low.
45*:												
Greys------------	B	None--------	---	---	>6.0	---	---	>60	---	High-----	Moderate	Moderate.
Pavohroo---------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Sedgway----------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
46---------------- Hades	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
47*:												
Hades------------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
Camelback--------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Low.
Hondoho----------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
48*:												
Hades------------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
Holmes-----------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Low.
49*:												
Hades------------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
Lanoak-----------	B	None--------	---	---	>6.0	---	---	>60	---	High-----	Moderate	Low.
50*:												
Hades------------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
Lanoak-----------	B	None--------	---	---	>6.0	---	---	>60	---	High-----	Moderate	Low.
Camelback--------	B	None--------	---	---	>6.0	---	---	40-60	Hard	Moderate	Moderate	Low.
51*:												
Harkness---------	C	None--------	---	---	>6.0	---	---	>60	---	High-----	High-----	High.
Sedgway----------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.

See footnotes at end of table.

TABLE 18.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
51*:												
Mikesell----------	C	None---------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
52----------------- Holmes	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Low.
53*:												
Hondoho----------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Arbone-----------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
54*:												
Hondoho----------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Arbone-----------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Ririe------------	B	None---------	---	---	>6.0	---	---	>60	---	High-----	High-----	Low.
55*:												
Hondoho----------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Hades------------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
56*:												
Hondoho----------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Lanoak-----------	B	None---------	---	---	>6.0	---	---	>60	---	High-----	Moderate	Low.
Camelback--------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Low.
57----------------- Inkom	D	Frequent----	Brief-----	Jan-Jun	0-2.0	Apparent	Feb-Jun	>60	---	High-----	High-----	Low.
58----------------- Inkom	C	Occasional	Brief-----	Jan-Jun	2.0-4.0	Apparent	Feb-Jun	>60	---	High-----	High-----	Low.
59*:												
Ireland----------	C	None---------	---	---	>6.0	---	---	20-40	Hard	Moderate	High-----	Low.
Camelback--------	B	None---------	---	---	>6.0	---	---	40-60	Hard	Moderate	Moderate	Low.
Rock outcrop.												
60*:												
Ireland----------	C	None---------	---	---	>6.0	---	---	20-40	Hard	Moderate	High-----	Low.
Dateman----------	C	None---------	---	---	>6.0	---	---	20-40	Hard	Moderate	Moderate	Low.

See footnotes at end of table.

TABLE 18.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
60*:												
Pavohroo----------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
61*:												
Ireland-----------	C	None---------	---	---	>6.0	---	---	20-40	Hard	Moderate	High-----	Low.
Hades-------------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
Cedarhill---------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
62, 63------------ Joes	B	None---------	---	---	>6.0	---	---	>60	---	High-----	High-----	Low.
64---------------- Joevar	B	Rare---------	---	---	5.0-6.0	Apparent	Mar-May	>60	---	High-----	High-----	Low.
65, 66, 67, 68---- Lanoak	B	None---------	---	---	>6.0	---	---	>60	---	High-----	Moderate	Low.
69*:												
Lanoak------------	B	None---------	---	---	>6.0	---	---	>60	---	High-----	Moderate	Low.
Camelback---------	B	None---------	---	---	>6.0	---	---	40-60	Hard	Moderate	Moderate	Low.
70*, 71*:												
Lanoak------------	B	None---------	---	---	>6.0	---	---	>60	---	High-----	Moderate	Low.
Greys-------------	B	None---------	---	---	>6.0	---	---	>60	---	High-----	Moderate	Moderate.
72*:												
Lanoak------------	B	None---------	---	---	>6.0	---	---	>60	---	High-----	Moderate	Low.
Hades-------------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
73*:												
Lanoak------------	B	None---------	---	---	>6.0	---	---	>60	---	High-----	Moderate	Low.
Watercanyon-------	B	None---------	---	---	>6.0	---	---	>60	---	High-----	High-----	Low.
Rexburg-----------	B	None---------	---	---	>6.0	---	---	>60	---	High-----	High-----	Low.
74*:												
Lava flows.												
McCarey-----------	C	None---------	---	---	>6.0	---	---	20-40	Hard	Moderate	High-----	Low.
McCarey Variant---	D	None---------	---	---	>6.0	---	---	10-20	Hard	Moderate	Moderate	Low.

See footnotes at end of table.

TABLE 18.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
75*:												
Manila-----------	C	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Low.
Bancroft---------	B	None--------	---	---	>6.0	---	---	>60	---	High-----	High-----	Low.
76*:												
Manila-----------	C	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Low.
Cedarhill--------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
77*:												
McDole-----------	B	Rare--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
McDole Variant---	B	Occasional	Brief	Feb-Jun	>6.0	---	---	>60	---	Moderate	High-----	Low.
78---------------- Moonlight	B	None--------	---	---	>6.0	---	---	>60	---	High-----	Moderate	Moderate.
79*:												
Moonlight--------	B	None--------	---	---	>6.0	---	---	>60	---	High-----	Moderate	Moderate.
Camelback--------	B	None--------	---	---	>6.0	---	---	40-60	Hard	Moderate	Moderate	Low.
80*:												
Moonlight--------	B	None--------	---	---	>6.0	---	---	>60	---	High-----	Moderate	Moderate.
Pavohroo---------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
81---------------- Oxford	D	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
82*:												
Oxford-----------	D	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Banida-----------	D	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
83*:												
Pavohroo---------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Moonlight--------	B	None--------	---	---	>6.0	---	---	>60	---	High-----	Moderate	Moderate.
84*:												
Pavohroo---------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Sedgway----------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.

See footnotes at end of table.

TABLE 18.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
84*:												
Toponce----------	C	None---------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
85*, 86*. Pits												
87, 88, 89, 90, 91---------------- Pocatello	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High------	Low.
92*:												
Portino----------	C	None---------	---	---	>6.0	---	---	20-40	Hard	Moderate	High------	Low.
Thornock---------	D	None---------	---	---	>6.0	---	---	10-20	Hard	Moderate	High------	Low.
93, 94, 95, 96---- Rexburg	B	None---------	---	---	>6.0	---	---	>60	---	High------	High------	Low.
97, 98, 99-------- Ririe	B	None---------	---	---	>6.0	---	---	>60	---	High------	High------	Low.
100*, 101*, 102*:												
Ririe------------	B	None---------	---	---	>6.0	---	---	>60	---	High------	High------	Low.
Watercanyon------	B	None---------	---	---	>6.0	---	---	>60	---	High------	High------	Low.
103*:												
Ririe------------	B	None---------	---	---	>6.0	---	---	>60	---	High------	High------	Low.
Watercanyon------	B	None---------	---	---	>6.0	---	---	>60	---	High------	High------	Low.
Cedarhill--------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High------	Low.
104*. Rock outcrop												
105*: Rubble land.												
Haploxerolls.												
106*:												
Scout Variant----	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
Camelback Variant	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Low.

See footnotes at end of table.

TABLE 18.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
107*:												
Sedgway----------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
Beaverdam--------	C	None--------	---	---	>6.0	---	---	>60	---	High-----	Moderate	Moderate.
108*. Slickens												
109*:												
Swanner----------	D	None--------	---	---	>6.0	---	---	10-20	Hard	Moderate	High-----	Low.
Hondoho----------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
110*:												
Swanner----------	D	None--------	---	---	>6.0	---	---	10-20	Hard	Moderate	High-----	Low.
Rock outcrop.												
111--------------- Tendoy	D	Frequent----	Brief-----	Jan-Jun	+.5-0.5	Apparent	Feb-Jun	>60	---	High-----	Moderate	Moderate.
112*:												
Toponce----------	C	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
Broadhead--------	C	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
113*, 114*: Urban land.												
Bahem------------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Broxon-----------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
115--------------- Valmar	C	None--------	---	---	>6.0	---	---	20-40	Hard	Moderate	Moderate	Low.
116*:												
Valmar-----------	C	None--------	---	---	>6.0	---	---	20-40	Hard	Moderate	Moderate	Low.
Camelback--------	B	None--------	---	---	>6.0	---	---	40-60	Hard	Moderate	Moderate	Low.
Hades------------	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
117*:												
Valmar-----------	C	None--------	---	---	>6.0	---	---	20-40	Hard	Moderate	Moderate	Low.

See footnotes at end of table.

TABLE 18.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
117*:												
Hades------------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
118*:												
Valmar-----------	C	None---------	---	---	>6.0	---	---	20-40	Hard	Moderate	Moderate	Low.
Rock outcrop.												
119*:												
Valmar-----------	C	None---------	---	---	>6.0	---	---	20-40	Hard	Moderate	Moderate	Low.
Watercanyon------	B	None---------	---	---	>6.0	---	---	>60	---	High-----	High-----	Low.
Hondoho----------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
120--------------- Watercanyon	B	None---------	---	---	>6.0	---	---	>60	---	High-----	High-----	Low.
121*:												
Watercanyon------	B	None---------	---	---	>6.0	---	---	>60	---	High-----	High-----	Low.
Swanner----------	D	None---------	---	---	>6.0	---	---	10-20	Hard	Moderate	High-----	Low.
Rock outcrop.												
122--------------- Wursten	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
123*:												
Wursten----------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Watercanyon Variant---------	B	None---------	---	---	>6.0	---	---	>60	---	High-----	High-----	High.
Hondoho----------	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.

* See description of the map unit for composition and behavior characteristics of the map unit.

** In the "High water table--Depth" column, a plus sign preceding the range in depth indicates that the water table is above the surface of the soil. The first numeral in the range indicates how high the water rises above the surface. The second numeral indicates the depth below the surface.

TABLE 19.--CLASSIFICATION OF THE SOILS

[An asterisk in the first column indicates that the soil is a taxadjunct to the series. See text for a description of those characteristics of the soil that are outside the range of the series]

Soil name	Family or higher taxonomic class
Arbone	Coarse-loamy, mixed, frigid Calcic Haploxerolls
Arimo	Coarse-loamy over sandy or sandy-skeletal, mixed, frigid Calcic Haploxerolls
Bahem	Coarse-silty, mixed, mesic Xerollic Calciorthids
Bancroft	Fine-silty, mixed, frigid Calcic Argixerolls
Banida	Fine, montmorillonitic, frigid Vertic Xerochrepts
Bear Lake	Fine-silty, frigid Typic Calciaquolls
Bear Lake Variant	Fine-silty, frigid Typic Calciaquolls
Beaverdam	Fine, montmorillonitic Argic Cryoborolls
Broadhead	Fine, montmorillonitic, frigid Pachic Argixerolls
Broncho	Sandy-skeletal, mixed, mesic Xerollic Camborthids
Broncho Variant	Loamy-skeletal, mixed mesic Xerollic Haplargids
Broxon	Coarse-silty over sandy or sandy-skeletal, mixed, mesic Xerollic Calciorthids
Camelback	Loamy-skeletal, mixed, frigid Pachic Argixerolls
Camelback Variant	Loamy-skeletal, mixed Typic Cryoborolls
Cedarhill	Loamy-skeletal, mixed, frigid Typic Calcixerolls
Coalbank	Ashy, frigid Mollic Vitrandepts
Dateman	Loamy-skeletal, mixed Pachic Cryoborolls
Downata	Fine-silty, mixed (calcareous), frigid Cumulic Haplaquolls
Downey	Coarse-loamy over sandy or sandy-skeletal, mixed, frigid Calcic Haploxerolls
Enochville	Fine-silty, mixed Cumulic Cryaquolls
Enochville Variant	Loamy-skeletal, mixed Cumulic Cryaquolls
Greys	Fine-silty, mixed Boralfic Cryoborolls
Hades	Fine-loamy, mixed, frigid Pachic Argixerolls
Haploxerolls	Haploxerolls
Harkness	Fine, montmorillonitic Mollic Cryoboralfs
Holmes	Loamy-skeletal, mixed, frigid Typic Argixerolls
Hondoho	Loamy-skeletal, mixed, frigid Calcic Haploxerolls
Inkom	Fine-silty, mixed (calcareous), frigid Cumulic Haplaquolls
Ireland	Loamy-skeletal, mixed, frigid Calcic Haploxerolls
Joes	Fine-silty, mixed, frigid Typic Calcixerolls
Joevar	Coarse-silty, mixed, frigid Cumulic Haploxerolls
Lanoak	Fine-silty, mixed, frigid Pachic Haploxerolls
Lonigan	Ashy-skeletal, frigid Mollic Vitrandepts
Manila	Fine, montmorillonitic, frigid Typic Argixerolls
McCarey	Fine-loamy, mixed, frigid Calcic Argixerolls
McCarey Variant	Loamy-skeletal, mixed frigid Lithic Argixerolls
* McDole	Coarse-silty, mixed, mesic Cumulic Haploxerolls
McDole Variant	Coarse-loamy, mixed, mesic Cumulic Haploxerolls
Mikesell	Fine, montmorillonitic Typic Cryoboralfs
Moonlight	Coarse-loamy, mixed Pachic Cryoborolls
Oxford	Fine, montmorillonitic, frigid Vertic Xerochrepts
Pavohroo	Fine-loamy, mixed Pachic Cryoborolls
Pocatello	Coarse-silty, mixed (calcareous), mesic Xeric Torriorthents
* Portino	Coarse-silty, mixed, mesic Xerollic Calciorthids
Rexburg	Coarse-silty, mixed, frigid Calcic Haploxerolls
Ricrest	Fine-loamy, mixed, frigid Calcic Pachic Haploxerolls
* Ridgecrest	Loamy-skeletal, carbonatic, frigid Typic Calcixerolls
Ririe	Coarse-silty, mixed, frigid Calcic Haploxerolls
Scout Variant	Loamy-skeletal, mixed Typic Cryochrepts
Sedgway	Loamy-skeletal, mixed Argic Cryoborolls
Swanner	Loamy-skeletal, mixed, frigid Lithic Haploxerolls
Tendoy	Euic Typic Borosaprists
* Thornock	Loamy, mixed (calcareous), mesic Lithic Xeric Torriorthents
Toponce	Fine, montmorillonitic Argic Pachic Cryoborolls
Trailcreek	Ashy, frigid Mollic Vitrandepts
Valmar	Loamy-skeletal, mixed, frigid Typic Argixerolls
Valmar Variant	Loamy-skeletal, mixed Typic Cryoborolls
Watercanyon	Coarse-silty, mixed, frigid Calcixerollic Xerochrepts
Watercanyon Variant	Coarse-silty, carbonatic, frigid Calcixerollic Xerochrepts
Wursten	Coarse-loamy, mixed, frigid Typic Calcixerolls
Yago	Clayey-skeletal, montmorillonitic, frigid Typic Argixerolls

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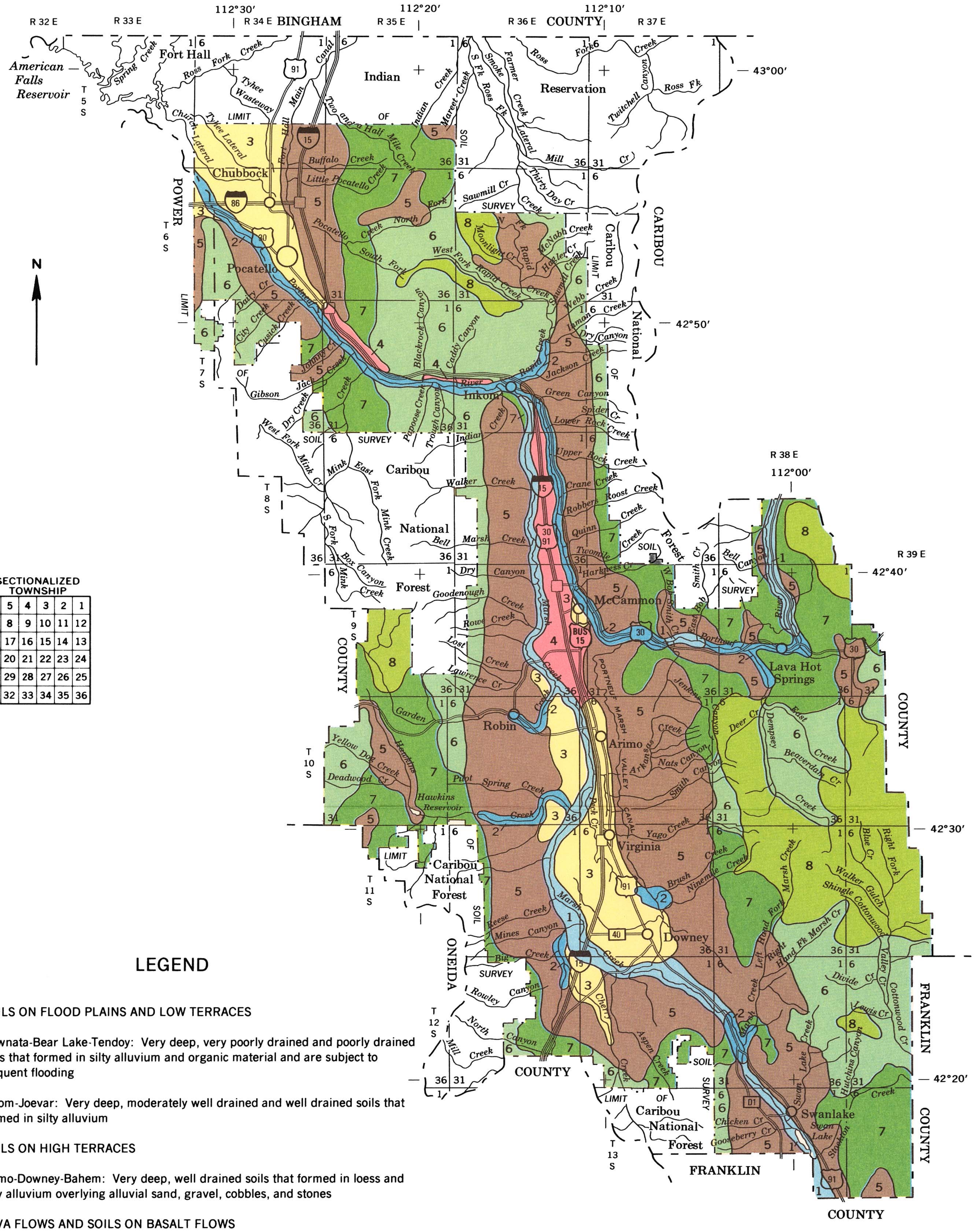


6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

SECTIONALIZED TOWNSHIP

LEGEND

SOILS ON FLOOD PLAINS AND LOW TERRACES

1	Downata-Bear Lake-Tendoy: Very deep, very poorly drained and poorly drained soils that formed in silty alluvium and organic material and are subject to frequent flooding
2	Inkom-Joevar: Very deep, moderately well drained and well drained soils that formed in silty alluvium

SOILS ON HIGH TERRACES

3	Arimo-Downey-Bahem: Very deep, well drained soils that formed in loess and silty alluvium overlying alluvial sand, gravel, cobbles, and stones

LAVA FLOWS AND SOILS ON BASALT FLOWS

4	Lava flows-McCarey-McCarey Variant: Lava flows, and moderately deep and shallow, well drained soils that formed in loess, silty alluvium, and material weathered from basalt

SOILS ON FAN TERRACES AND FOOTHILLS

5	Ririe-Rexburg-Lanoak: Very deep, well drained soils that formed in loess and in silty alluvium derived from loess

SOILS ON FOOTHILLS AND MOUNTAINS

6	Camelback-Hades-Valmar: Very deep to moderately deep, well drained, noncalcareous soils that formed in alluvium, colluvium, and residuum derived from quartzite and related rocks
7	Cedarhill-Ireland: Very deep and moderately deep, well drained calcareous soils that formed in alluvium colluvium, and residuum derived from limestone, dolomite, and related rock
8	Sedgway-Pavohroo-Harkness: Very deep, well drained, cold soils that formed in alluvium and colluvium derived from sedimentary and metasedimentary rock and in alluvium derived from loess

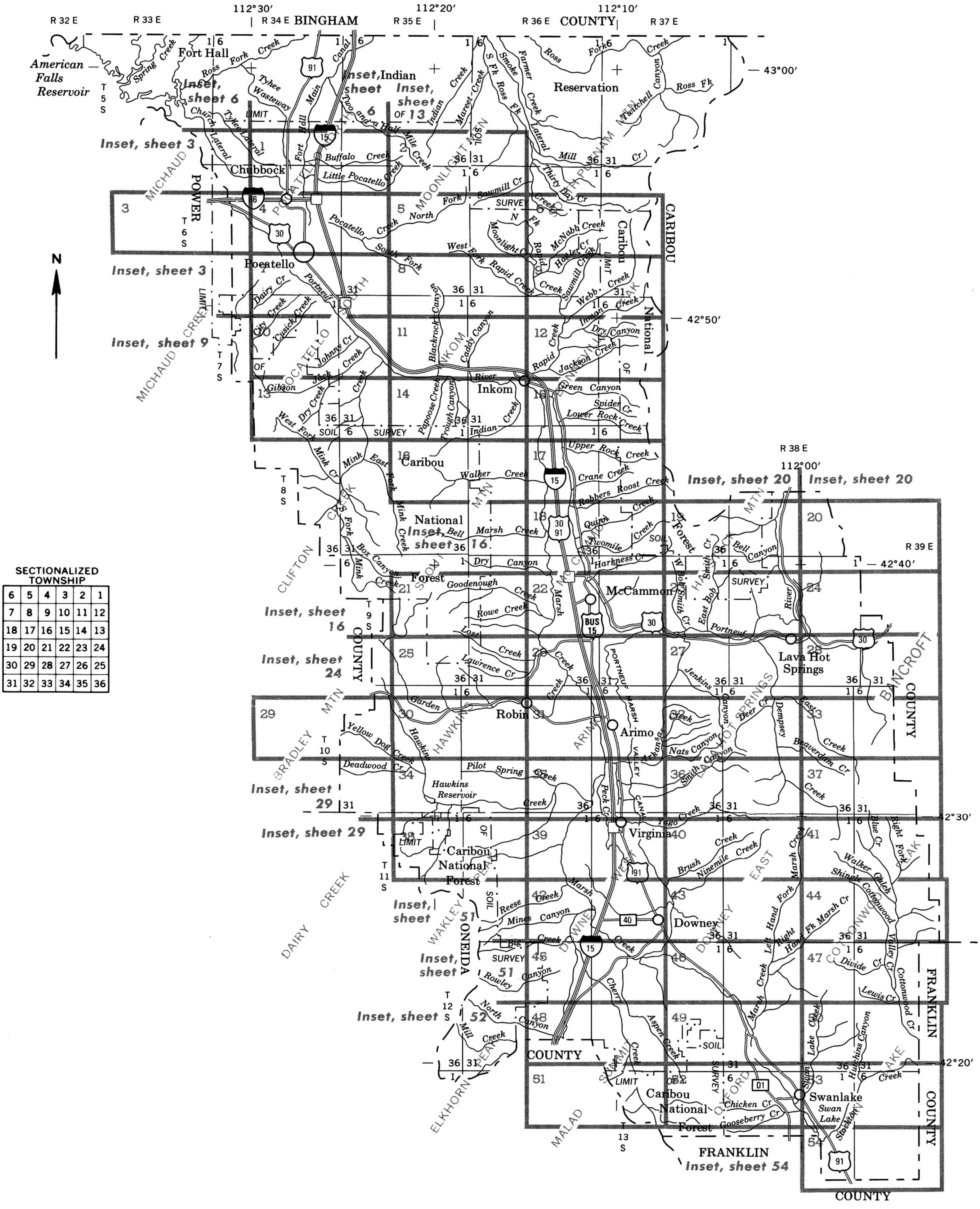
COMPILED 1984

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
UNIVERSITY OF IDAHO, COLLEGE OF AGRICULTURE
IDAHO SOIL CONSERVATION COMMISSION

GENERAL SOIL MAP
BANNOCK COUNTY AREA
IDAHO

Scale 1:316,800
1 0 1 2 3 4 5 Miles
1 0 5 10 Km



INDEX TO MAP SHEETS
BANNOCK COUNTY AREA
IDAHO

Scale 1:316,800

1 0 1 2 3 4 5 Miles

1 0 5 10 Km

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

BANNOCK COUNTY AREA, IDAHO

UNIVERSITY OF IDAHO, COLLEGE OF AGRICULTURE
IDAHO SOIL CONSERVATION COMMISSION

SOIL LEGEND

SYMBOL	NAME
1	Arbone silt loam, 1 to 4 percent slopes
2	Arbone silt loam, 4 to 12 percent slopes
3	Arbone-Hondoho complex, 12 to 20 percent slopes*
4	Arbone-McCarey-Lava flows complex, 4 to 12 percent slopes
5	Arbone-Rubble land complex, 2 to 8 percent slopes*
6	Arimo silt loam, 0 to 3 percent slopes
7	Bahem silt loam, 0 to 2 percent slopes
8	Bahem silt loam, 2 to 4 percent slopes
9	Bancroft silt loam, 4 to 12 percent slopes
10	Bancroft silt loam, 12 to 20 percent slopes
11	Bancroft-Manila complex, 15 to 30 percent slopes
12	Banida silty clay loam, 0 to 2 percent slopes
13	Bear Lake-Bear Lake Variant complex, drained, 0 to 1 percent slopes
14	Broadhead-Hades-Yago complex, 4 to 20 percent slopes*
15	Broadhead-Yago complex, 4 to 12 percent slopes*
16	Broadhead-Yago complex, 12 to 20 percent slopes*
17	Broncho cobbly loam, 1 to 8 percent slopes
18	Broncho extremely stony loam, 4 to 20 percent slopes
19	Broncho Variant-Pocatello complex, 20 to 50 percent slopes*
20	Broncho Variant-Ririe-Pocatello complex, 20 to 50 percent slopes*
21	Broxon silt loam, 0 to 2 percent slopes
22	Broxon silt loam, 2 to 4 percent slopes
23	Camelback-Cedarhill, high precipitation-Lanoak complex, 20 to 50 percent slopes*
24	Camelback-Greys complex, 20 to 30 percent slopes*
25	Camelback-Hades complex, 6 to 20 percent slopes*
26	Camelback-Valmar-Hades complex, 20 to 30 percent slopes*
27	Camelback Variant-Valmar Variant complex, 20 to 60 percent slopes*
28	Cedarhill very cobbly silt loam, 30 to 60 percent slopes*
29	Cedarhill-Ireland-Rock outcrop complex, 30 to 60 percent slopes*
30	Cedarhill-Ririe-Watercanyon complex, 30 to 60 percent slopes*
31	Cedarhill-Rock outcrop complex, 30 to 60 percent slopes*
32	Cedarhill, high precipitation-Camelback-Moonlight complex, 20 to 50 percent slopes*
33	Cedarhill, high precipitation-Hades-Ricrest complex, 20 to 50 percent slopes*
34	Cedarhill, high precipitation-Hondoho-Arbone complex, 20 to 50 percent slopes*
35	Cedarhill, high precipitation-Hondoho-Ridgecrest complex, 20 to 50 percent slopes*
36	Cedarhill, high precipitation-Manila complex, 30 to 50 percent slopes*
37	Cedarhill, high precipitation-Trailcreek-Coalbank complex, 20 to 50 percent slopes*
38	Coalbank very fine sandy loam, 4 to 12 percent slopes
39	Coalbank-Trailcreek-Lonigan complex, 12 to 20 percent slopes*
40	Coalbank-Trailcreek-Lonigan complex, 20 to 50 percent slopes*
41	Downata-Bear Lake complex, drained, 0 to 1 percent slopes
42	Downey-Arimo complex, 0 to 3 percent slopes
43	Downey-Arimo complex, 3 to 8 percent slopes
44	Enochville-Enochville Variant complex, 0 to 1 percent slopes*
45	Greys-Pavahroo-Sedgway association, 8 to 20 percent slopes*
46	Hades gravelly silt loam, 6 to 15 percent slopes
47	Hades-Camelback-Hondoho complex, 30 to 60 percent slopes*
48	Hades-Holmes complex, 1 to 10 percent slopes*
49	Hades-Lanoak complex, 4 to 12 percent slopes*
50	Hades-Lanoak-Camelback complex, 20 to 50 percent slopes*
51	Harkness-Sedgway-Mikesell complex, 20 to 50 percent slopes*
52	Holmes gravelly loam, 1 to 4 percent slopes
53	Hondoho-Arbone complex, 4 to 12 percent slopes*
54	Hondoho-Arbone-Ririe complex, 20 to 50 percent slopes*
55	Hondoho-Hades complex, 4 to 12 percent slopes*
56	Hondoho-Lanoak-Camelback complex, 20 to 50 percent slopes*
57	Inkom silt loam, 0 to 1 percent slopes
58	Inkom silt loam, drained, 0 to 1 percent slopes
59	Ireland-Camelback-Rock outcrop complex, 30 to 60 percent slopes*
60	Ireland-Dateman-Pavohroo association, 20 to 60 percent slopes*
61	Ireland-Hades-Cedarhill complex, 20 to 60 percent slopes*
62	Joes silt loam, 1 to 4 percent slopes
63	Joes silt loam, 4 to 12 percent slopes
64	Joevar silt loam, 0 to 3 percent slopes

SYMBOL	NAME
65	Lanoak silt loam, 1 to 4 percent slopes
66	Lanoak silt loam, 4 to 12 percent slopes
67	Lanoak silt loam, 12 to 20 percent slopes
68	Lanoak silt loam, 20 to 30 percent slopes
69	Lanoak-Camelback complex, 20 to 50 percent slopes*
70	Lanoak-Greys association, 4 to 12 percent slopes*
71	Lanoak-Greys association, 12 to 20 percent slopes*
72	Lanoak-Hades complex, 6 to 20 percent slopes*
73	Lanoak-Watercanyon-Rexburg complex, 12 to 20 percent slopes
74	Lava flows-McCarey-McCarey Variant complex, 1 to 8 percent slopes*
75	Manila-Bancroft complex, 6 to 15 percent slopes
76	Manila-Cedarhill, high precipitation complex, 20 to 30 percent slopes
77	McDole-McDole Variant complex, 0 to 2 percent slopes
78	Moonlight silt loam, 30 to 60 percent slopes*
79	Moonlight-Camelback association, 30 to 60 percent slopes*
80	Moonlight-Pavohroo complex, 30 to 60 percent slopes*
81	Oxford silty clay loam, 4 to 12 percent slopes
82	Oxford-Banida complex, 2 to 4 percent slopes
83	Pavohroo-Moonlight complex, 30 to 60 percent slopes*
84	Pavohroo-Sedgway-Toponce complex, 20 to 50 percent slopes*
85	Pits, gravel
86	Pits, quarry
87	Pocatello silt loam, 1 to 4 percent slopes
88	Pocatello silt loam, 4 to 8 percent slopes
89	Pocatello silt loam, 8 to 12 percent slopes
90	Pocatello silt loam, 12 to 20 percent slopes
91	Pocatello silt loam, 20 to 30 percent slopes
92	Portino-Thornock complex, 0 to 2 percent slopes*
93	Rexburg silt loam, 1 to 4 percent slopes
94	Rexburg silt loam, 4 to 12 percent slopes
95	Rexburg silt loam, 12 to 20 percent slopes
96	Rexburg silt loam, 20 to 40 percent slopes
97	Ririe silt loam, 1 to 4 percent slopes
98	Ririe silt loam, 4 to 12 percent slopes
99	Ririe silt loam, 12 to 20 percent slopes
100	Ririe-Watercanyon complex, 4 to 12 percent slopes
101	Ririe-Watercanyon complex, 12 to 20 percent slopes
102	Ririe-Watercanyon complex, 20 to 30 percent slopes
103	Ririe-Watercanyon-Cedarhill complex, 12 to 30 percent slopes*
104	Rock outcrop
105	Rubble land-Haploxerolls complex, steep*
106	Scout Variant-Camelback Variant association, 30 to 60 percent slopes*
107	Sedgway-Beaverdam complex, 30 to 60 percent slopes*
108	Slickens
109	Swanner-Hondoho complex, 12 to 20 percent slopes*
110	Swanner-Rock outcrop complex, 50 to 80 percent slopes*
111	Tendoy muck, drained, 0 to 1 percent slopes
112	Toponce-Broadhead association, 6 to 30 percent slopes*
113	Urban land-Bahem-Broxon complex, 0 to 3 percent slopes
114	Urban land-Bahem-Broxon complex, 3 to 6 percent slopes
115	Valmar very cobbly silt loam, low precipitation, 40 to 80 percent slopes*
116	Valmar-Camelback-Hades complex, 30 to 60 percent slopes*
117	Valmar-Hades complex, 20 to 50 percent slopes*
118	Valmar, cool-Rock outcrop complex, 20 to 60 percent slopes*
119	Valmar, low precipitation-Watercanyon-Hondoho complex, 20 to 50 percent slopes*
120	Watercanyon silt loam, 12 to 20 percent slopes*
121	Watercanyon-Swanner-Rock outcrop complex, 20 to 50 percent slopes*
122	Wursten gravelly silt loam, 1 to 4 percent slopes
123	Wursten-Watercanyon Variant-Hondoho complex, 12 to 40 percent slopes*
	Water

*Indicates broadly defined units.

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES	
National, state or province	——— – –
County or parish	———— –
Minor civil division	— — —
Reservation (national forest or park, state forest or park, and large airport)	—— · ——
Land grant	—— · · ——
Limit of soil survey (label)	————
Field sheet matchline & neatline	————
AD HOC BOUNDARY (label)	Hedley Airstrip
Small airport, airfield, park, oilfield, cemetery, or flood pool	FLOOD POOL LINE
STATE COORDINATE TICK	——┴——
LAND DIVISION CORNERS (sections and land grants)	└ ┴ ┼ ┬┴
ROADS	
Divided (median shown if scale permits)	═══
Other roads	━━━
Trail	– – – – –
ROAD EMBLEM & DESIGNATIONS	
Interstate	21
Federal	173
State	28
County, farm or ranch	1283
RAILROAD	—┼—┼—┼—
POWER TRANSMISSION LINE (normally not shown)	--•----•----•--
PIPE LINE (normally not shown)	├─┤ ├─┤ ├─┤ ├─┤
FENCE (normally not shown)	—×———×—
LEVEES	
Without road	ııııııııııııı
With road	ııııııııı ━━━━━ ııııııııı
With railroad	ııııııııı —┼—┼—┼— ııııııııı
DAMS	
Large (to scale)	⬡
Medium or small	water w
PITS	
Gravel pit	✕
Mine or quarry	⚒

MISCELLANEOUS CULTURAL FEATURES	
Farmstead, house (omit in urban areas)	▪
Church	✝
School	⚑
Indian mound (label)	⌒ Indian Mound
Located object (label)	⊙ Tower
Tank (label)	● Gas
Wells, oil or gas	♁ ♁
Windmill	✱
Kitchen midden	⊓

WATER FEATURES

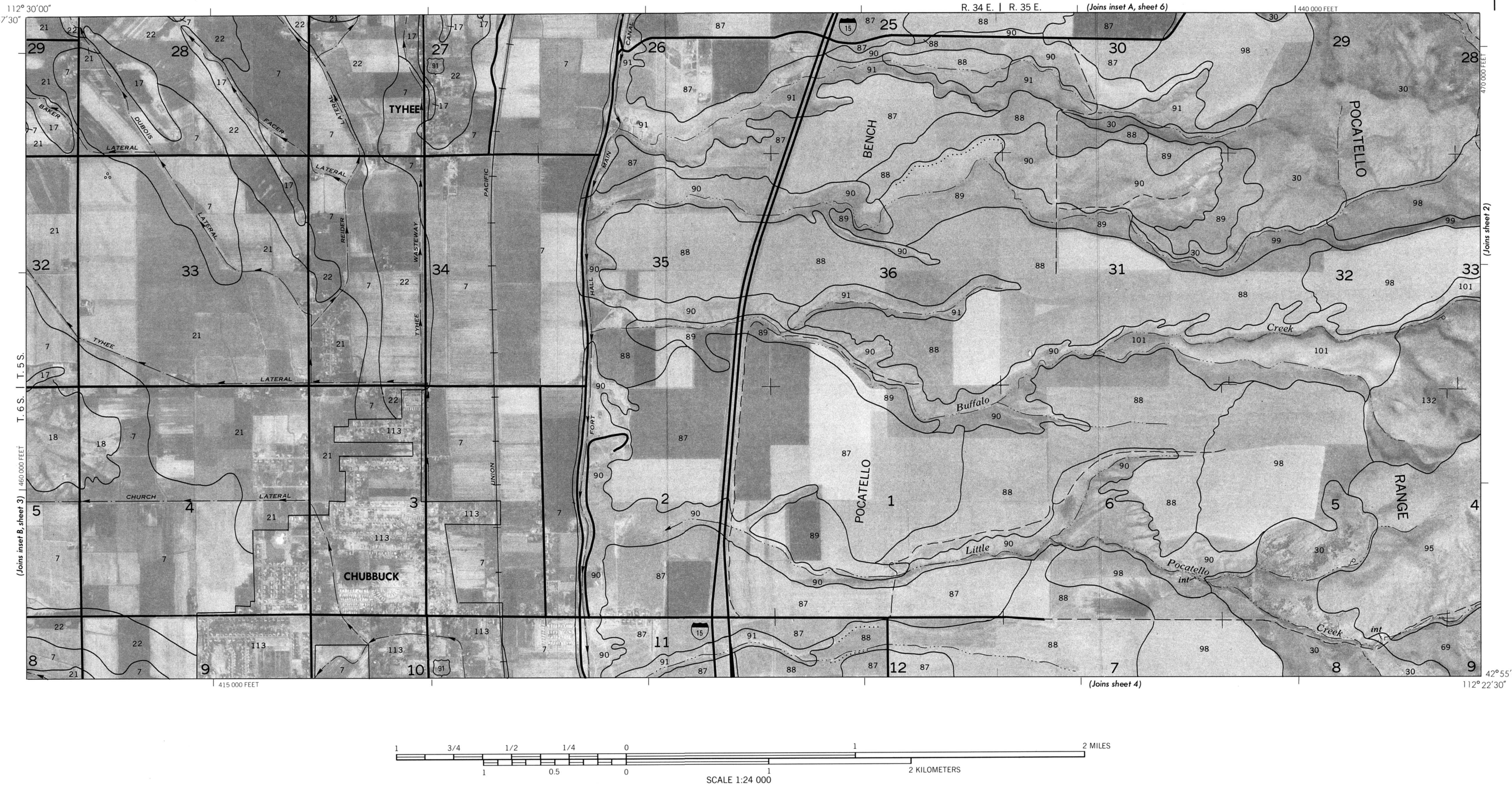
DRAINAGE	
Perennial, double line	≈
Perennial, single line	—·—·—
Intermittent	—···—
Drainage end	—···→
Canals or ditches	
Double-line (label)	CANAL
Drainage and/or irrigation	→·→
LAKES, PONDS AND RESERVOIRS	
Perennial	water w
Intermittent	int i
MISCELLANEOUS WATER FEATURES	
Marsh or swamp	ш
Spring	o~
Well, artesian	-●-
Well, irrigation	-o-
Wet spot	ψ

SPECIAL SYMBOLS FOR SOIL SURVEY

SOIL DELINEATIONS AND SYMBOLS	123 31
ESCARPMENTS	
Bedrock (points down slope)	vvvvvvvvvvvvvvvv
Other than bedrock (points down slope)	'''''''''''''''''''''
SHORT STEEP SLOPE	· · · · · · · · · ·
GULLY	∿∿∿∿∿∿
DEPRESSION OR SINK	◊
SOIL SAMPLE SITE (normally not shown)	Ⓢ
MISCELLANEOUS	
Blowout	◡
Clay spot	※
Gravelly spot	∴
Gumbo, slick or scabby spot (sodic)	ø
Dumps and other similar non soil areas	≋
Prominent hill or peak	☼
Rock outcrop (includes sandstone and shale)	v
Saline spot	+
Sandy spot	⁙
Severely eroded spot	≑
Slide or slip (tips point upslope)	))
Stony spot, very stony spot	0 ∞
Tuff or volcanic ash deposits	⊕
Sanitary landfill	Sanitary landfill
Dumps	#

①

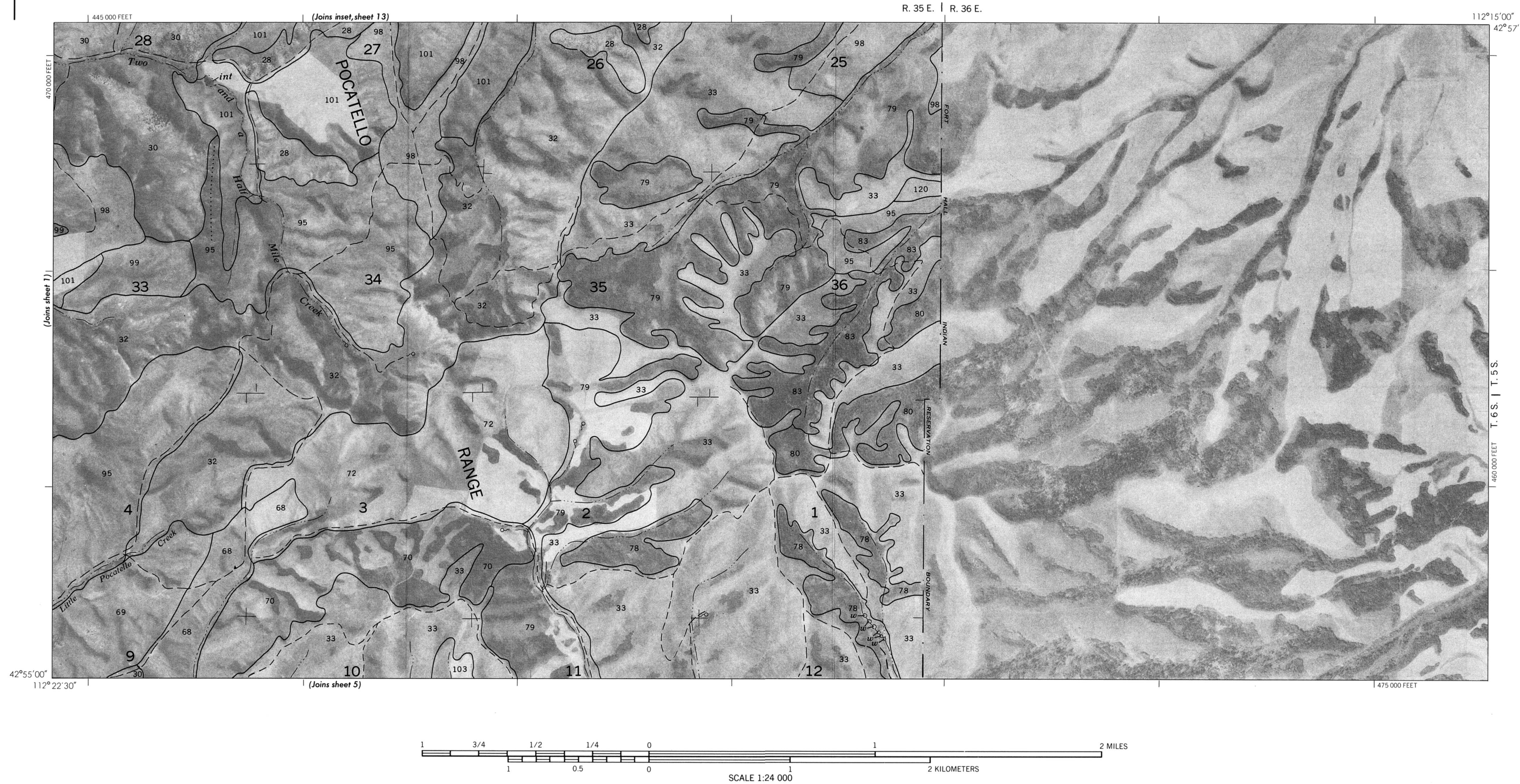
SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 1



BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 1

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 2



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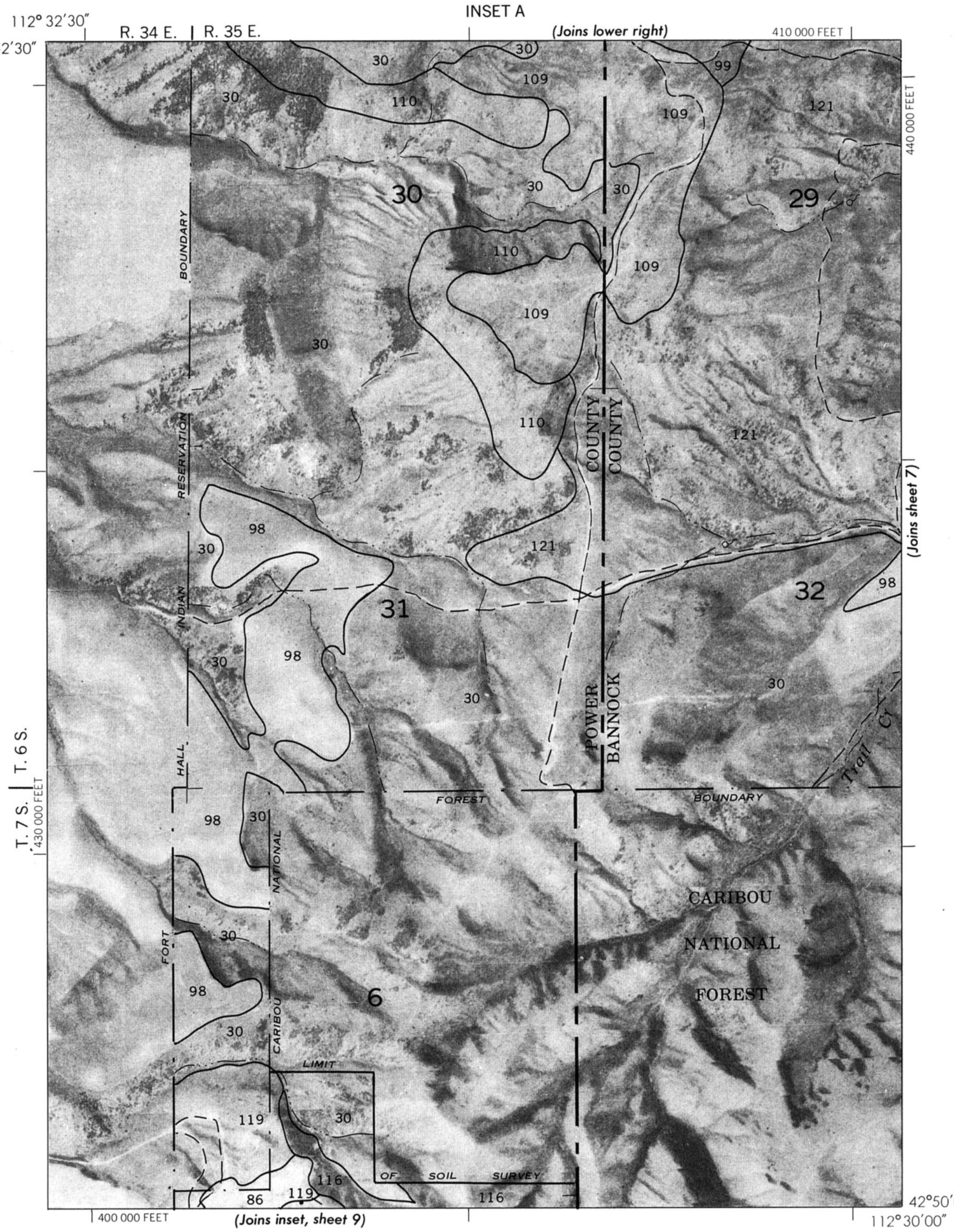
BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 2

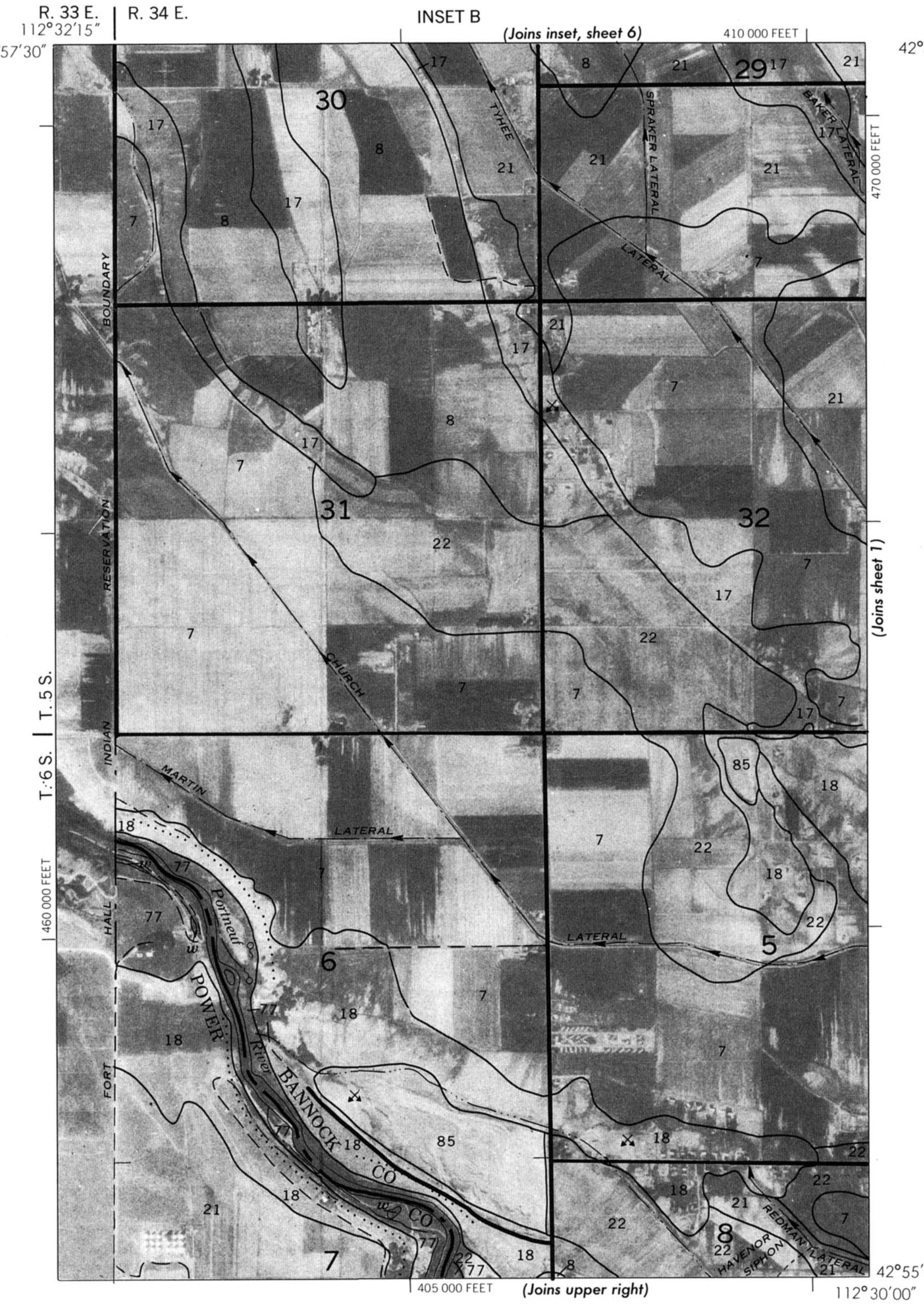
SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 3

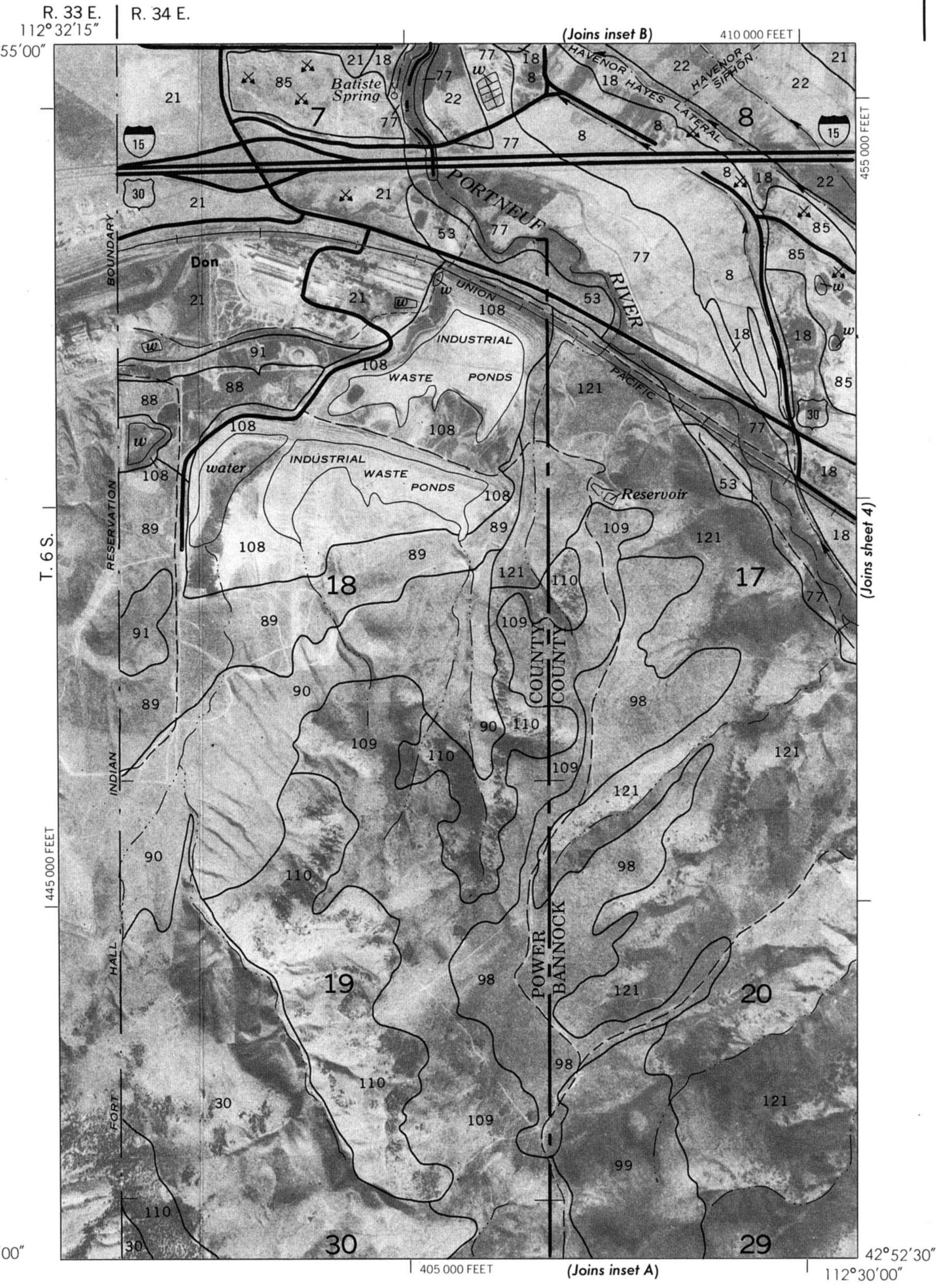
BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 3

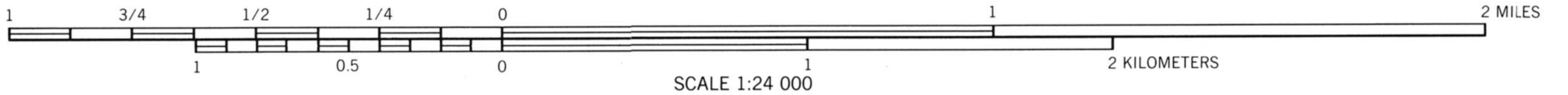
INSET A



INSET B

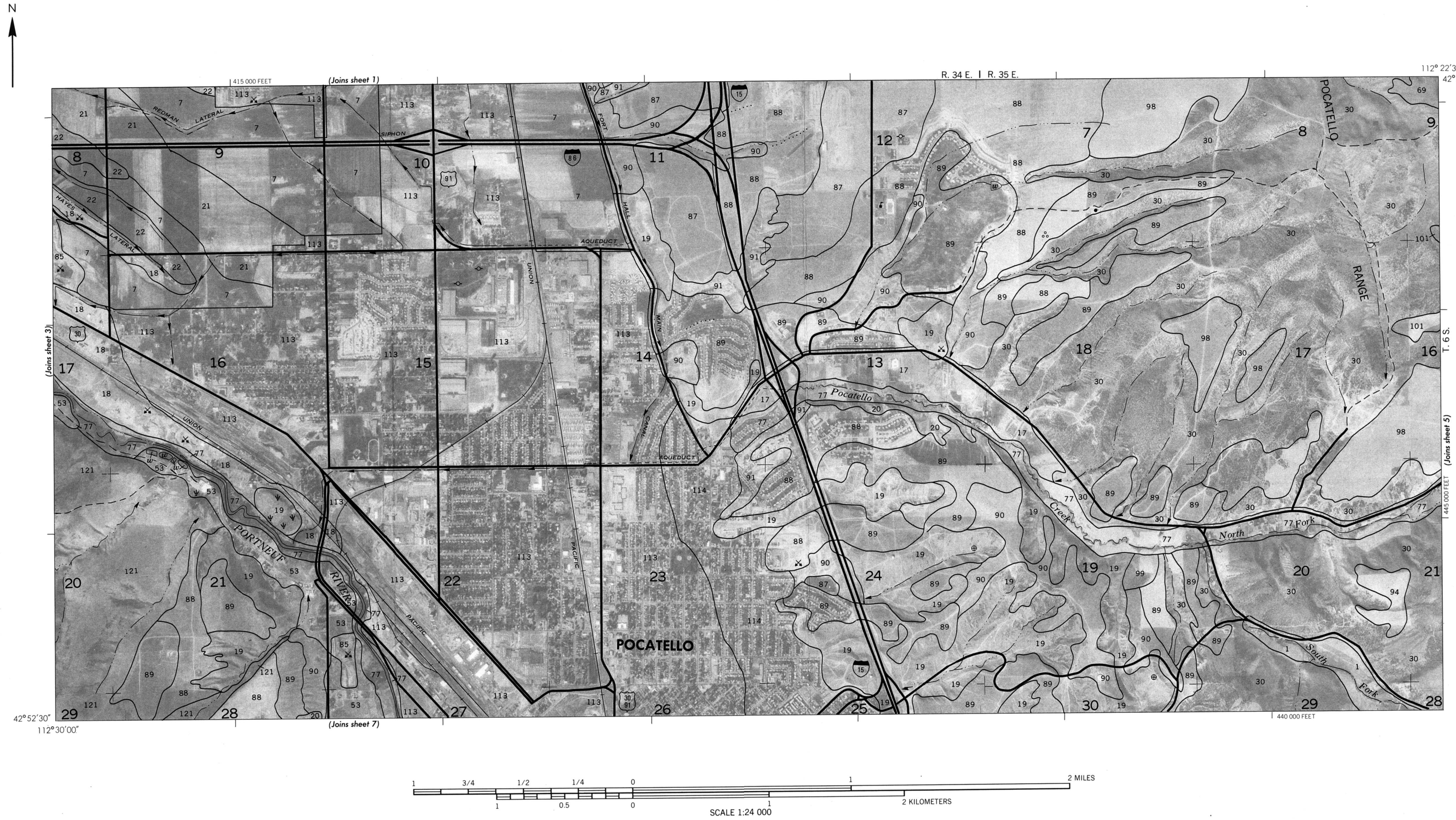






SCALE 1:24 000

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 4



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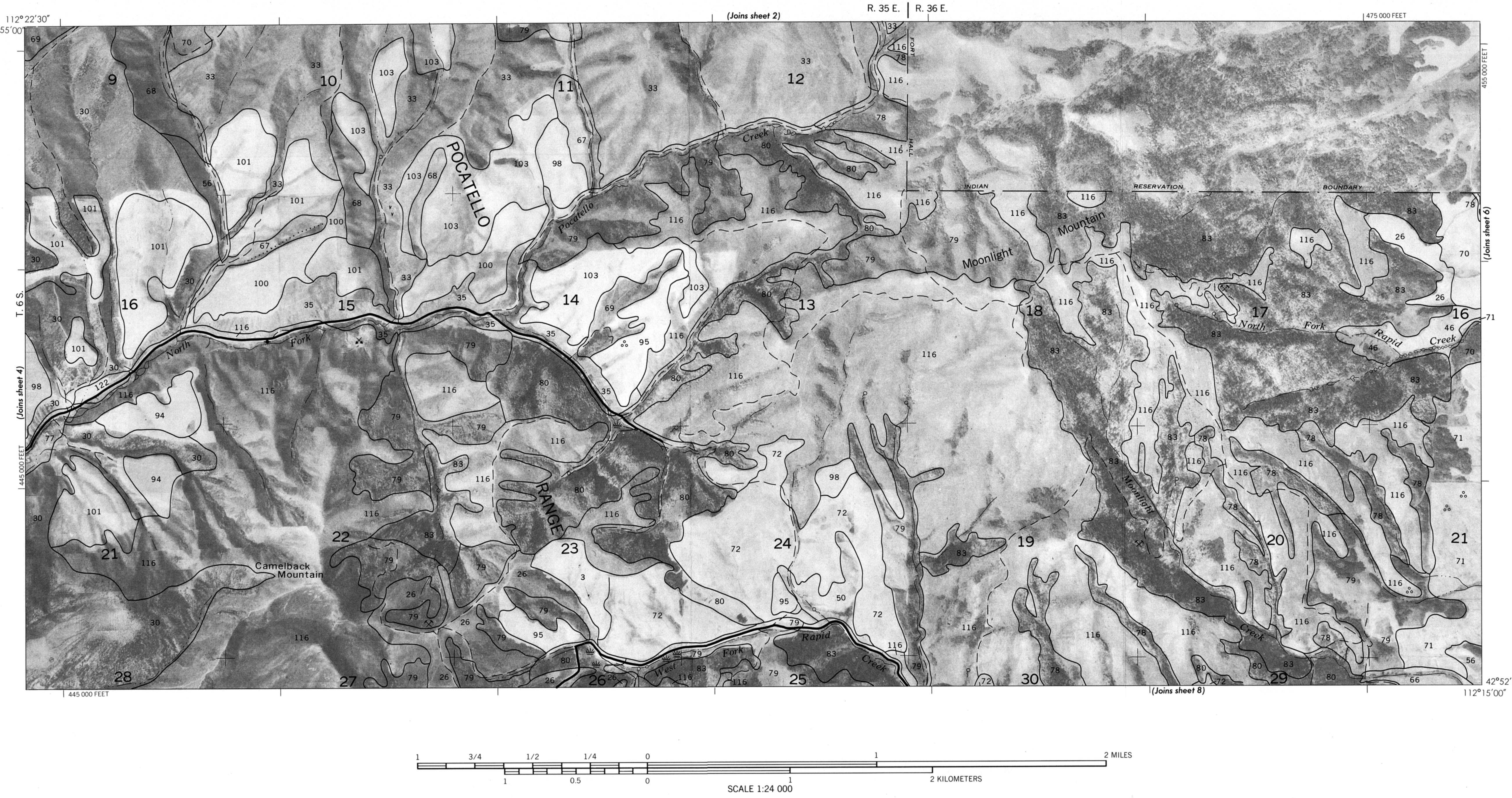
BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 4

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 5

N



BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 5

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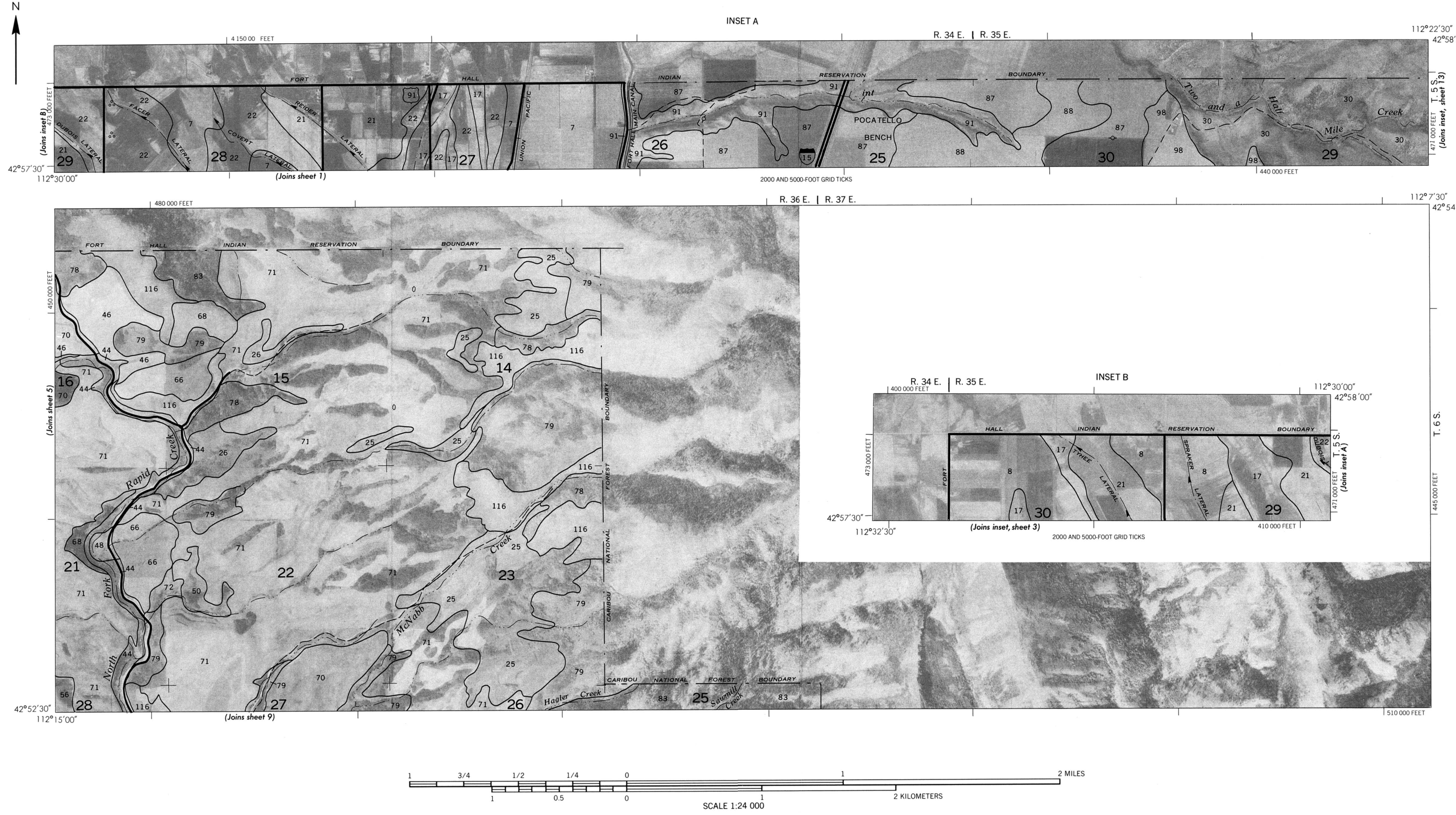
SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 6



Coordinate grid ticks and land division corners, if shown, are approximately positioned.

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BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 6

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 7

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BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 7

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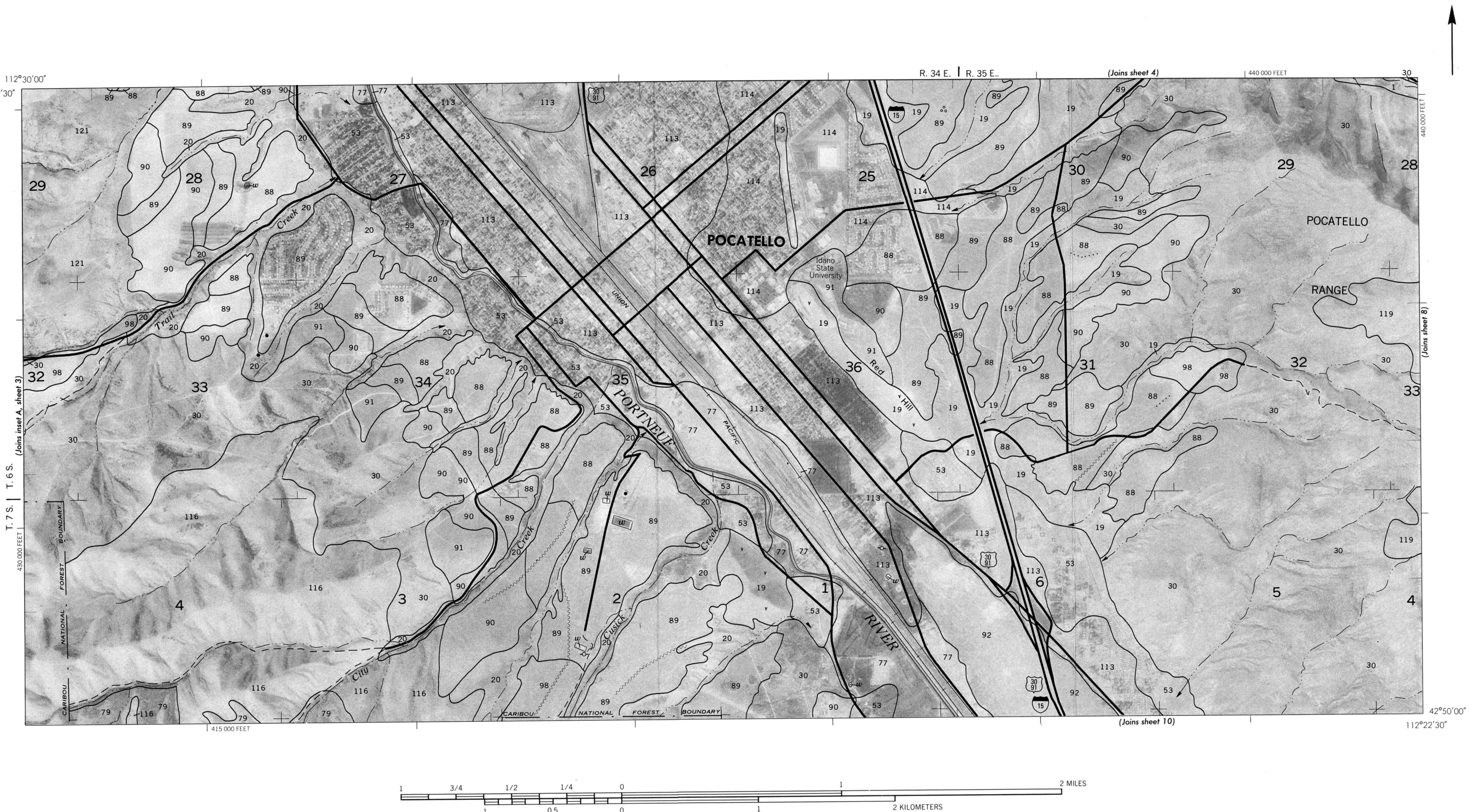

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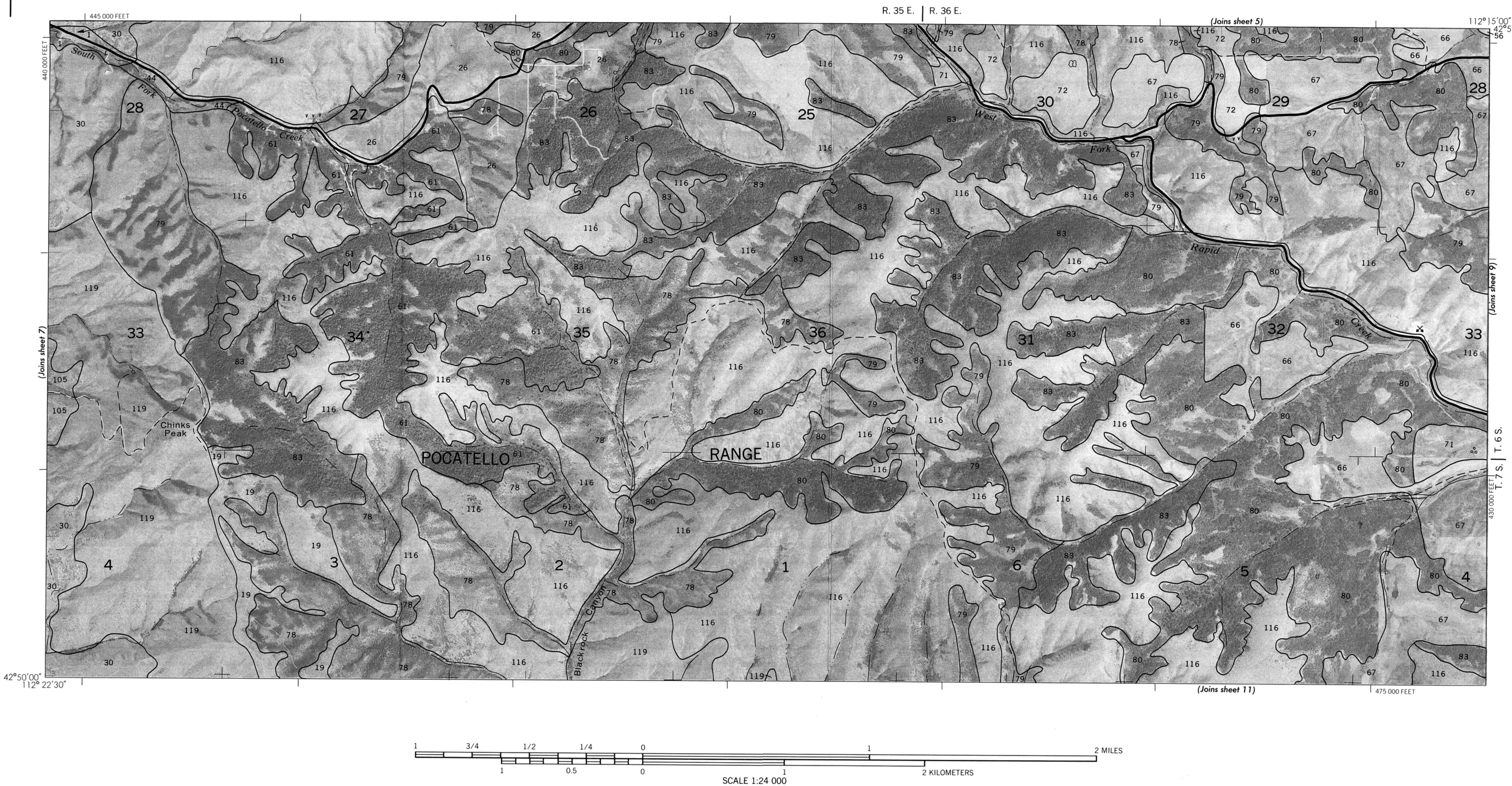
SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 8



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BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 8

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 9

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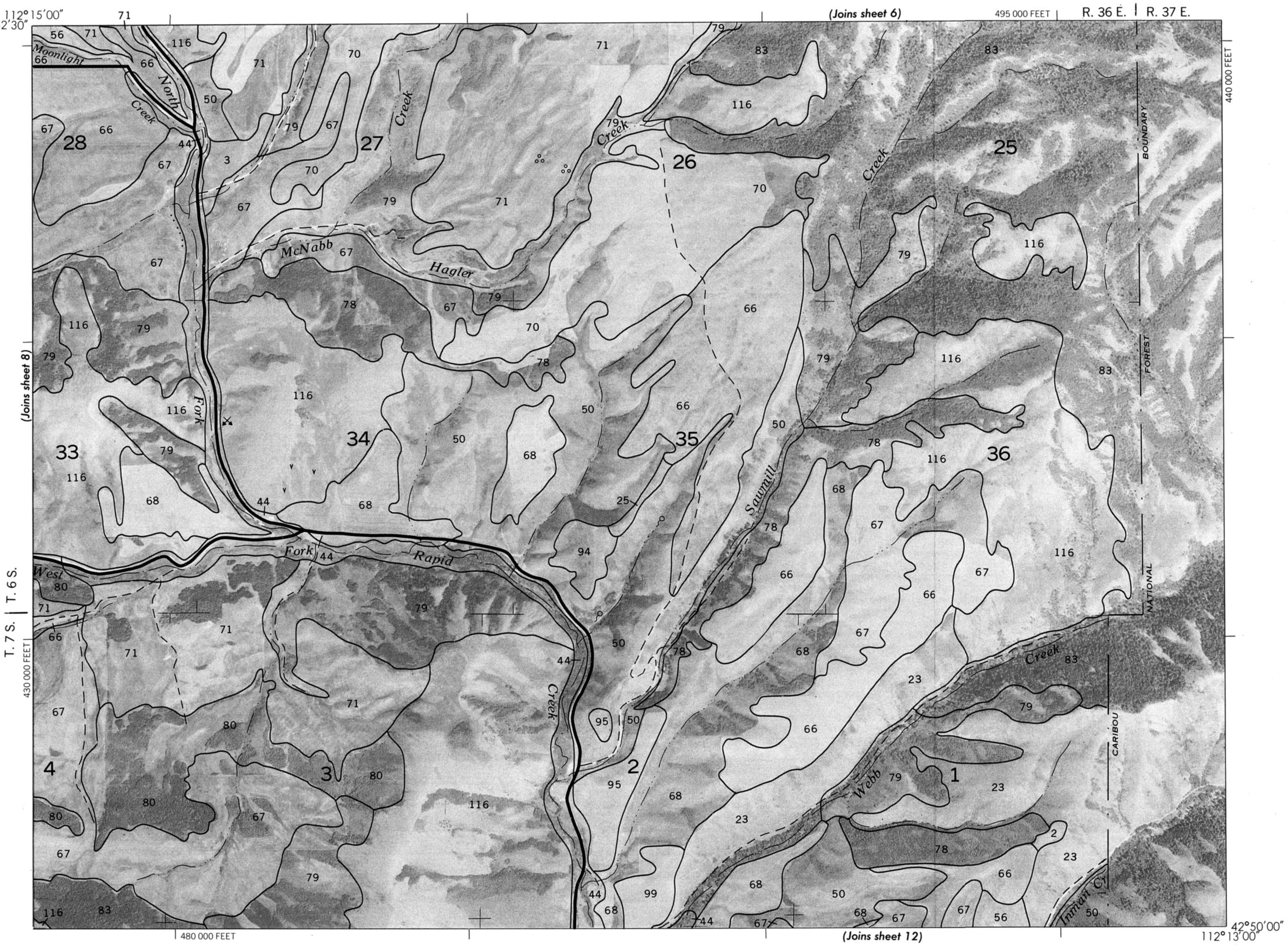
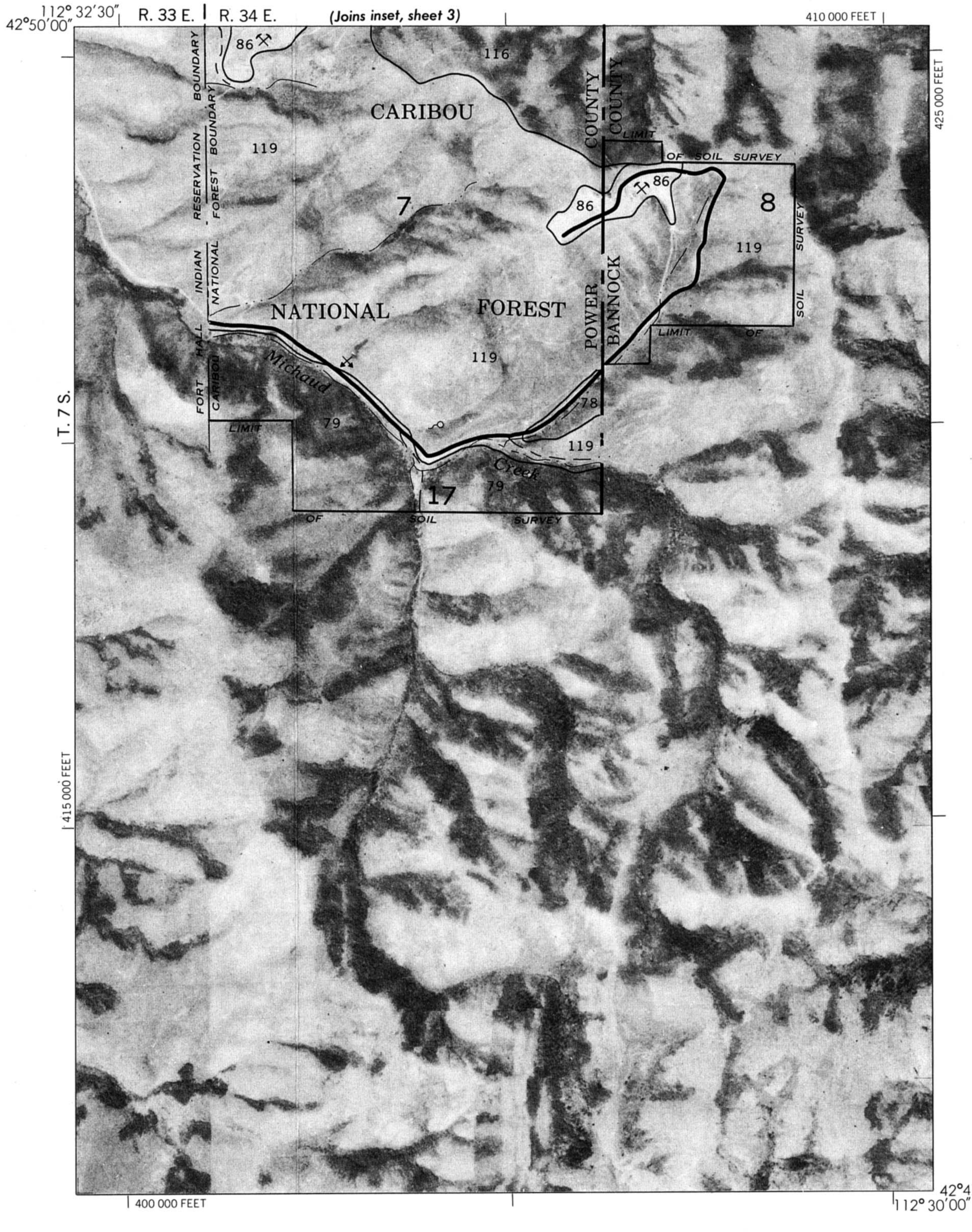
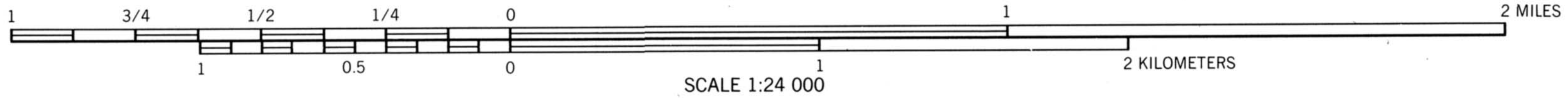
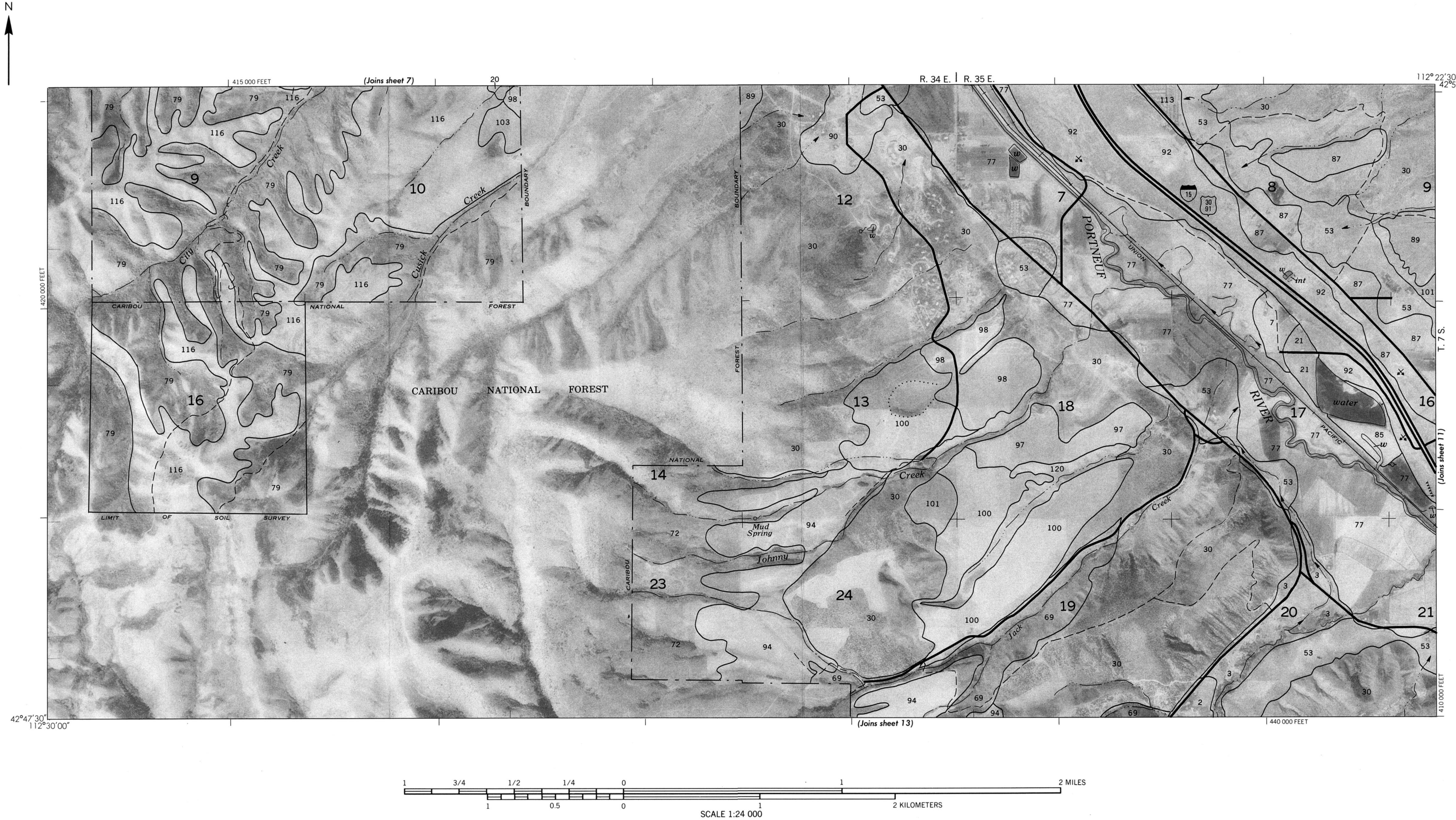






SCALE 1:24 000

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 10



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SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 11

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 11

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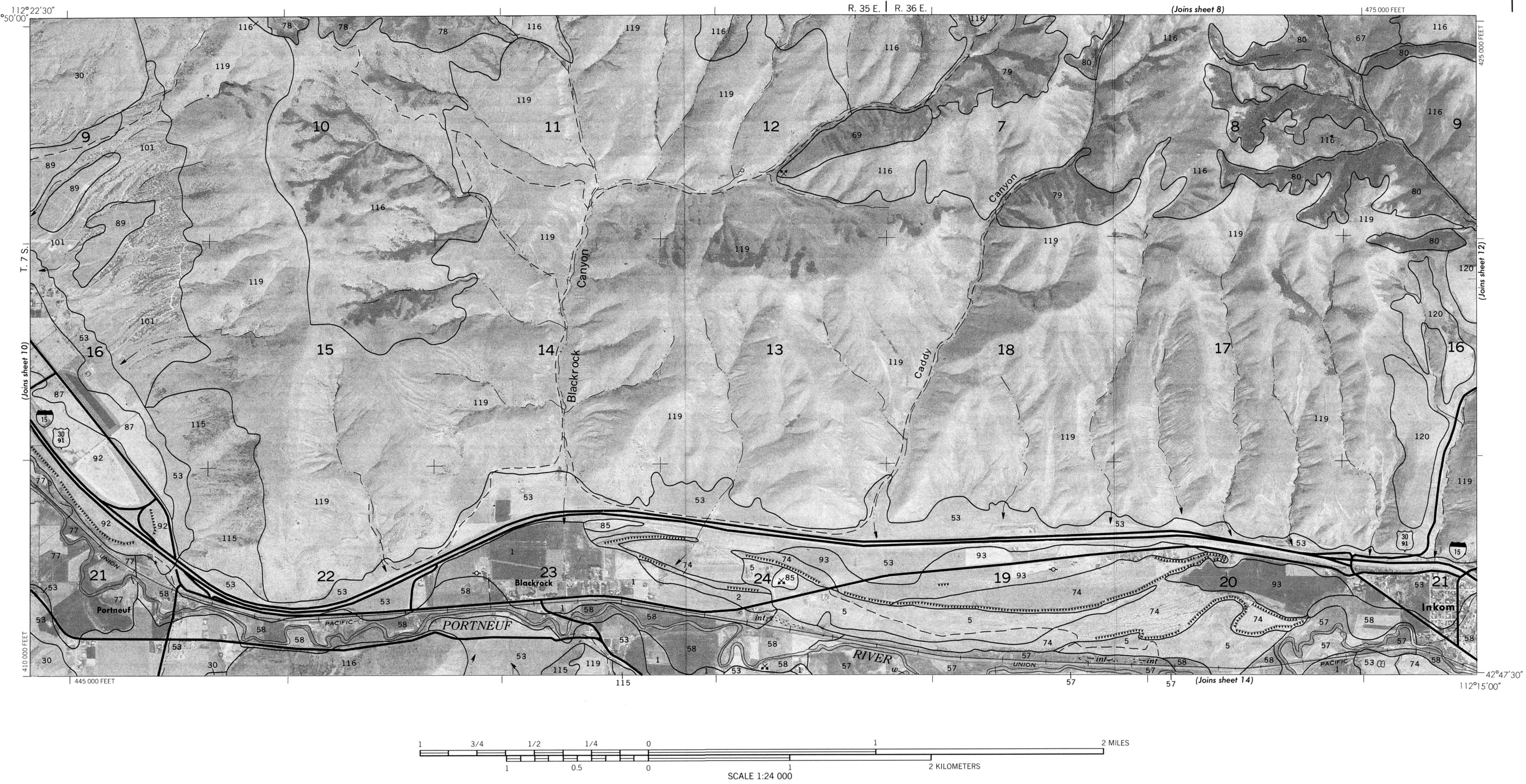
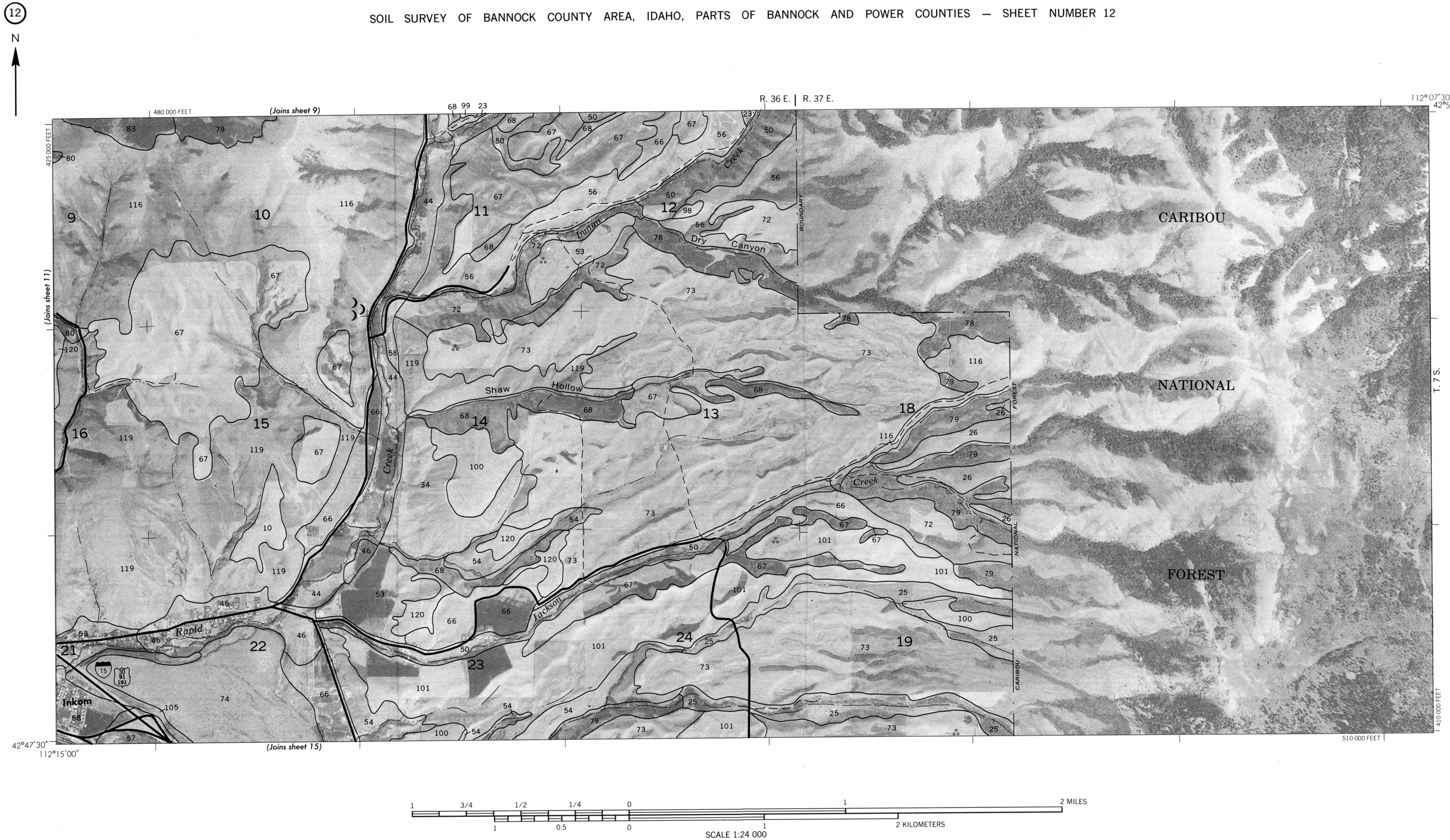


SCALE 1:24 000

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 12



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SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 13

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 13

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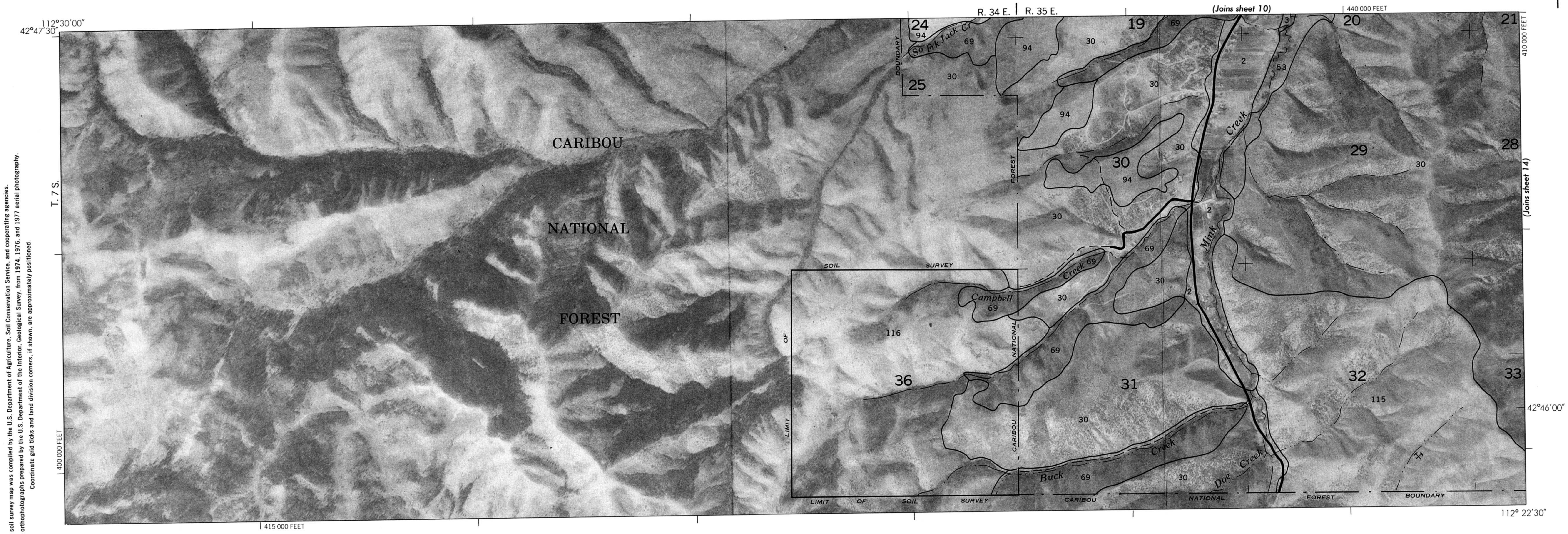
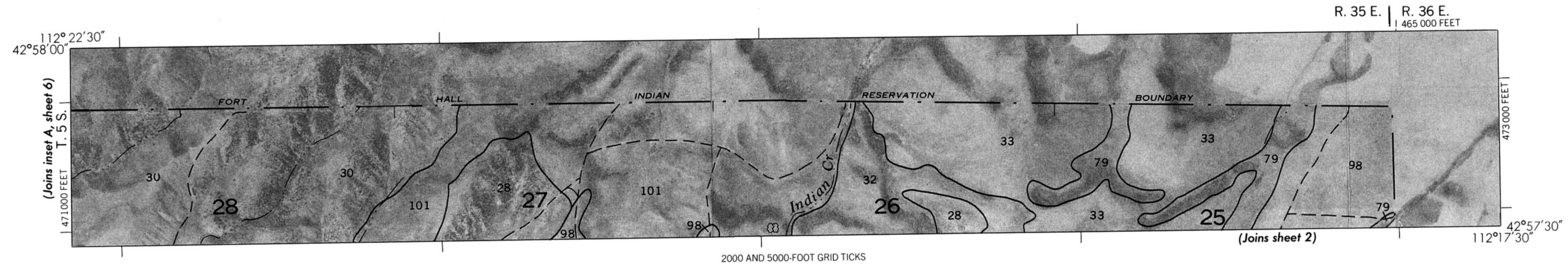
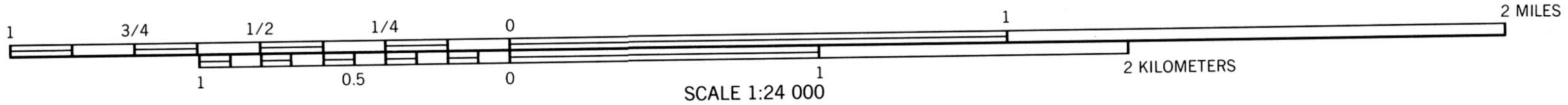
Coordinate grid ticks and land division corners, if shown, are approximately positioned.





2000 AND 5000-FOOT GRID TICKS



SCALE 1:24 000

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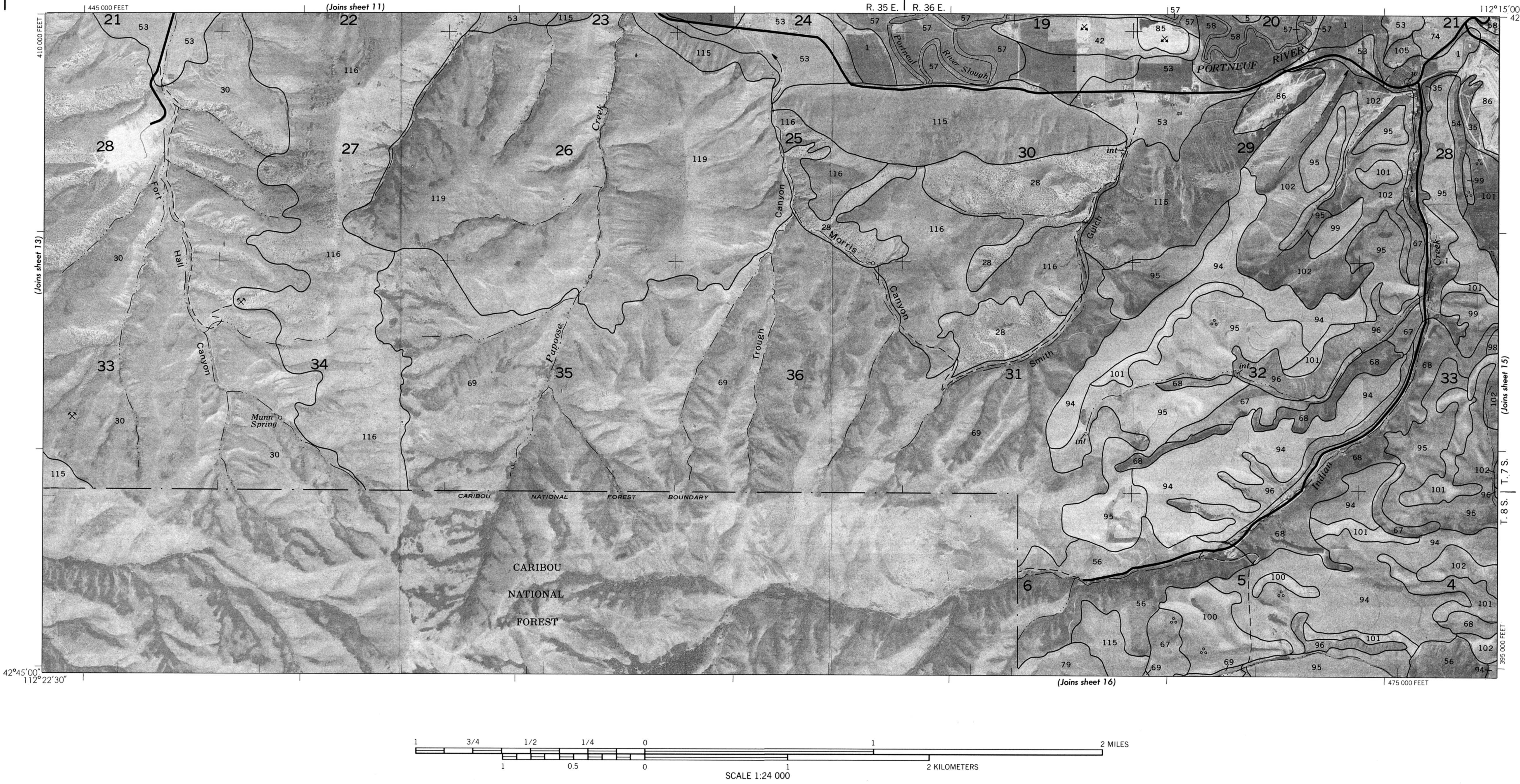
SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 14



SCALE 1:24 000

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 14

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SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 15

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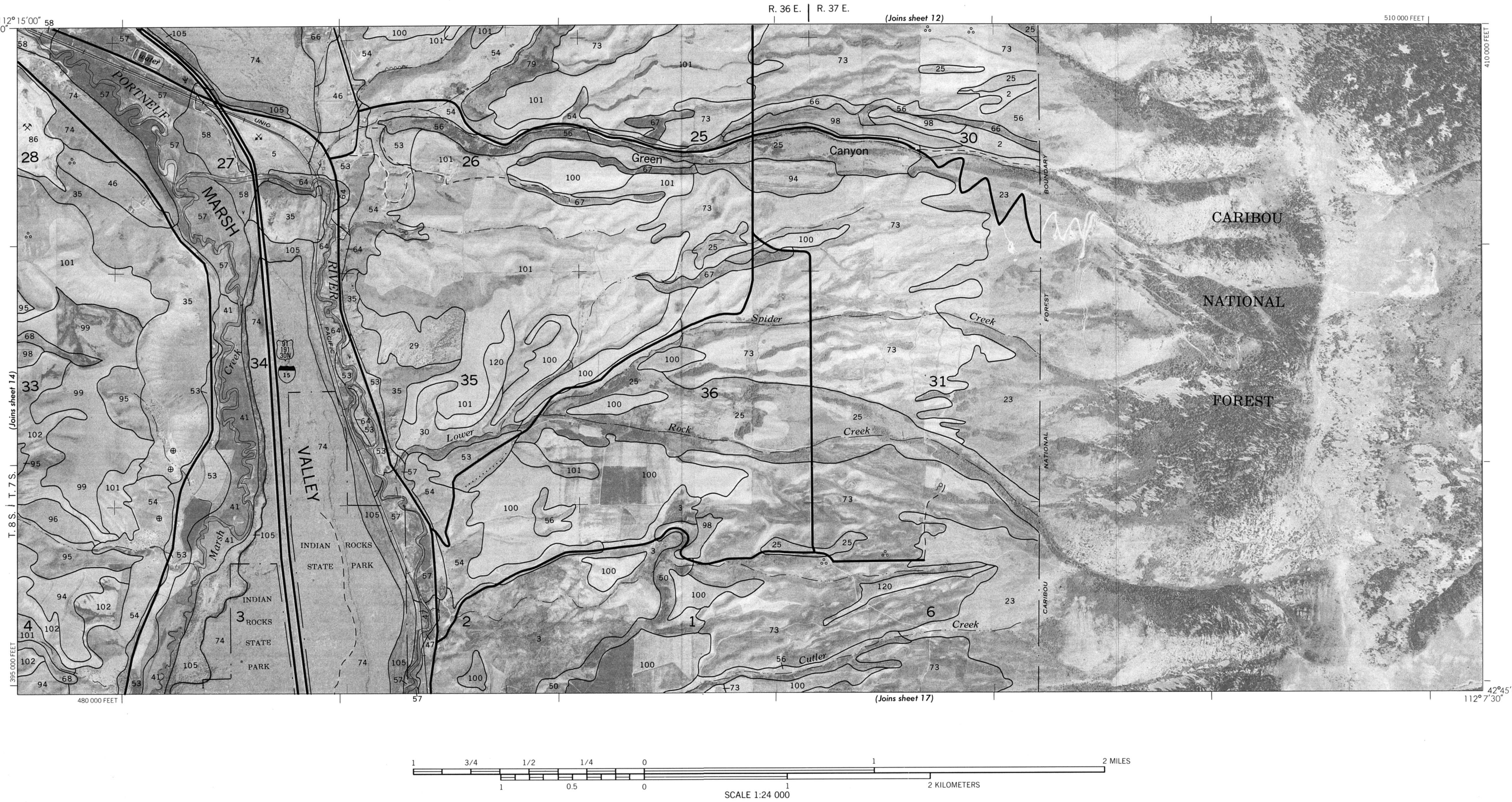
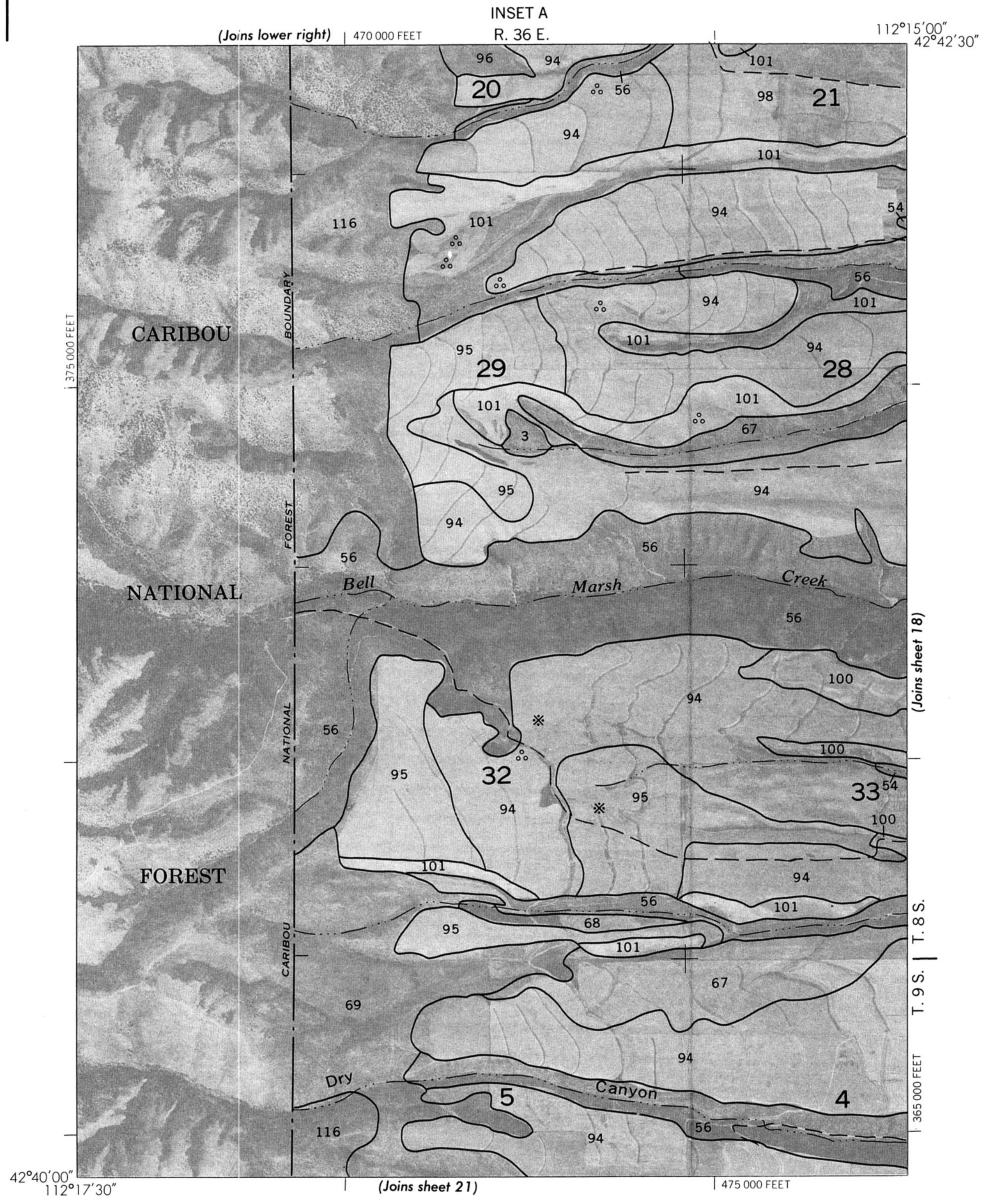
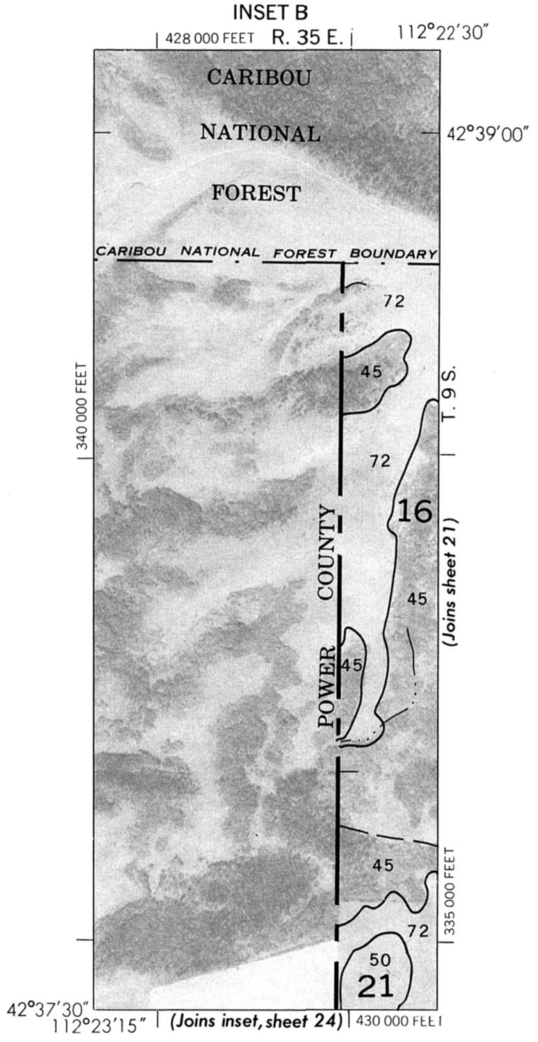


SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 16

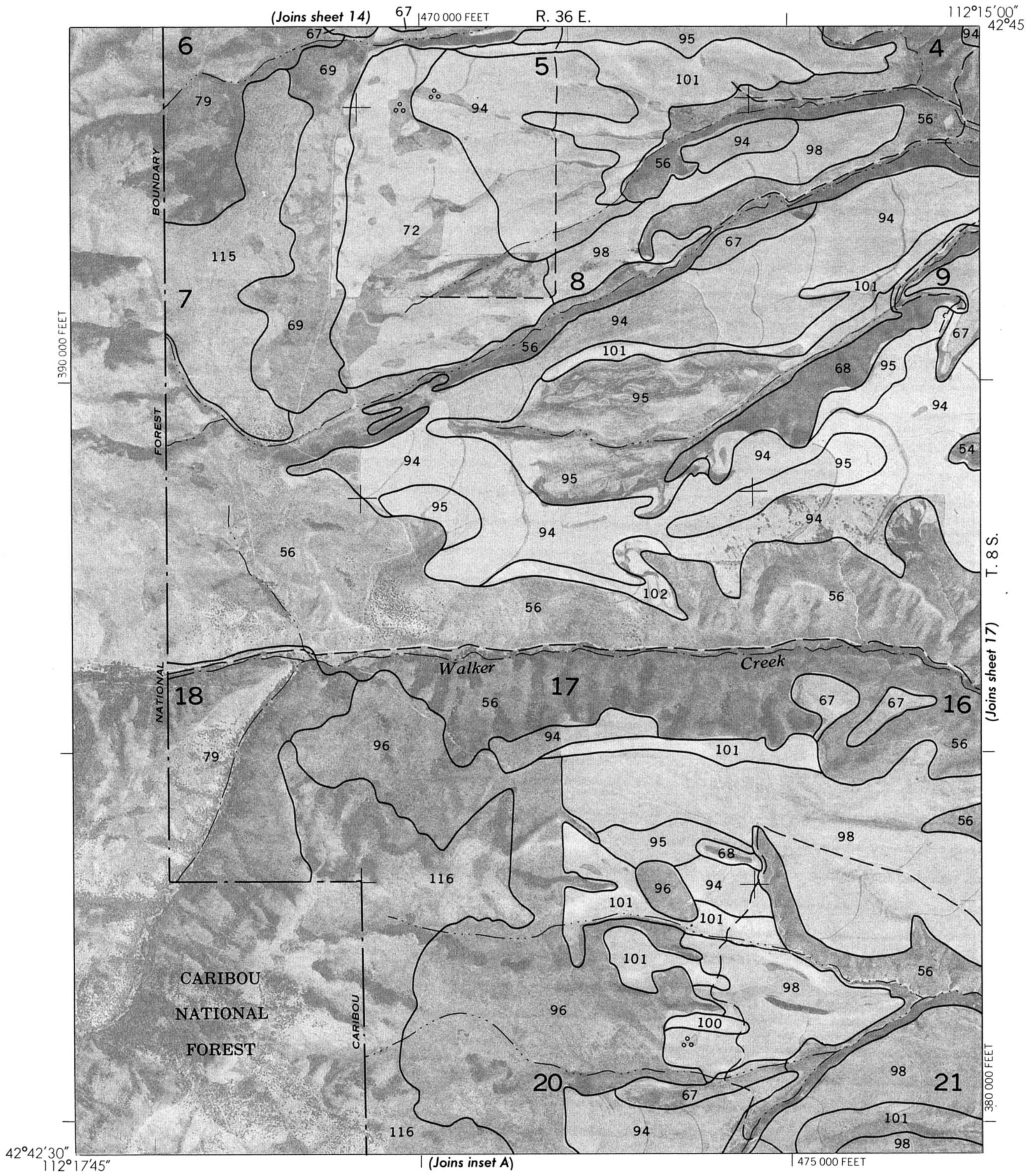
INSET A

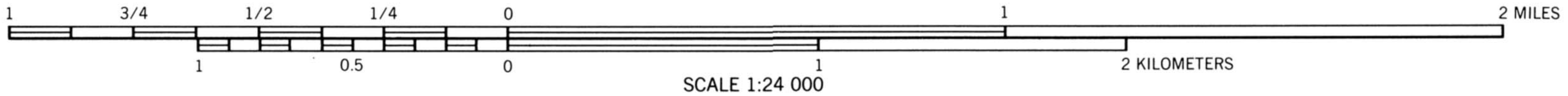


INSET B



2000 AND 5000-FOOT GRID TICKS





SCALE 1:24 000

Coordinate grid ticks and land division corners, if shown, are approximately positioned.

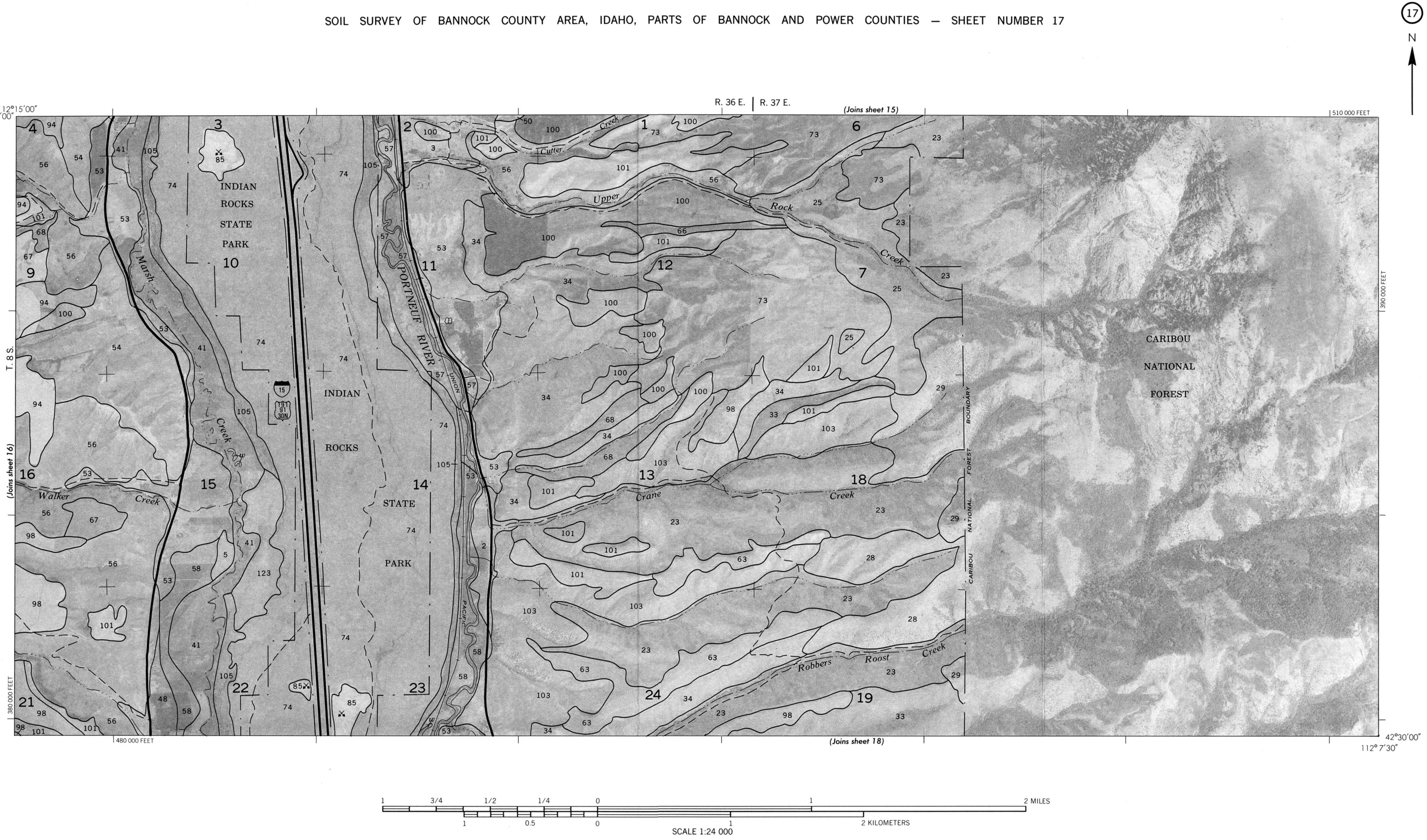
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 16

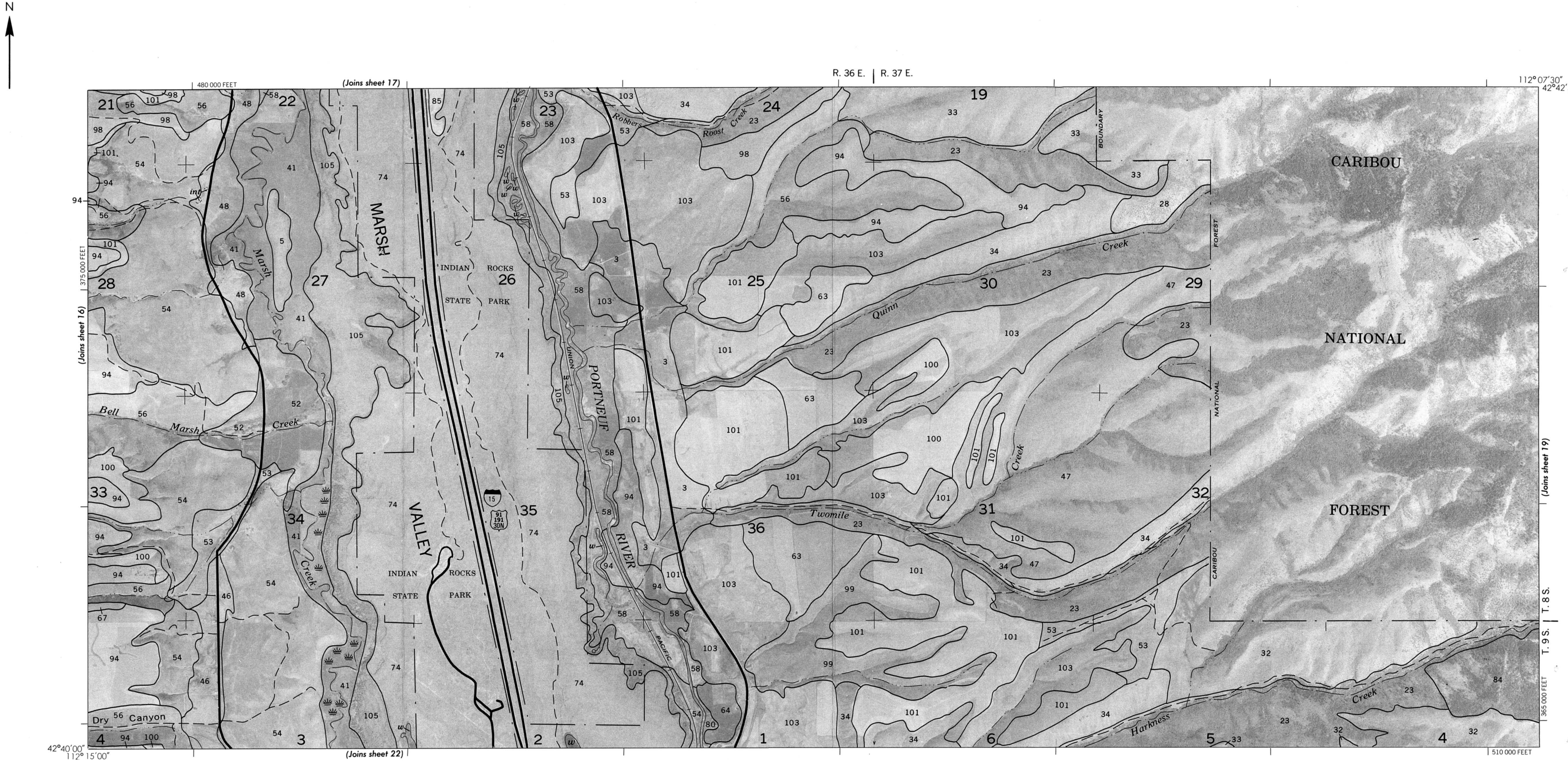
SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 17

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

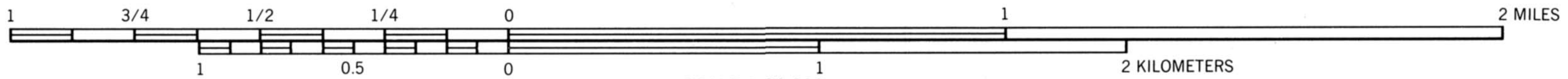


(18)

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 18



BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 18



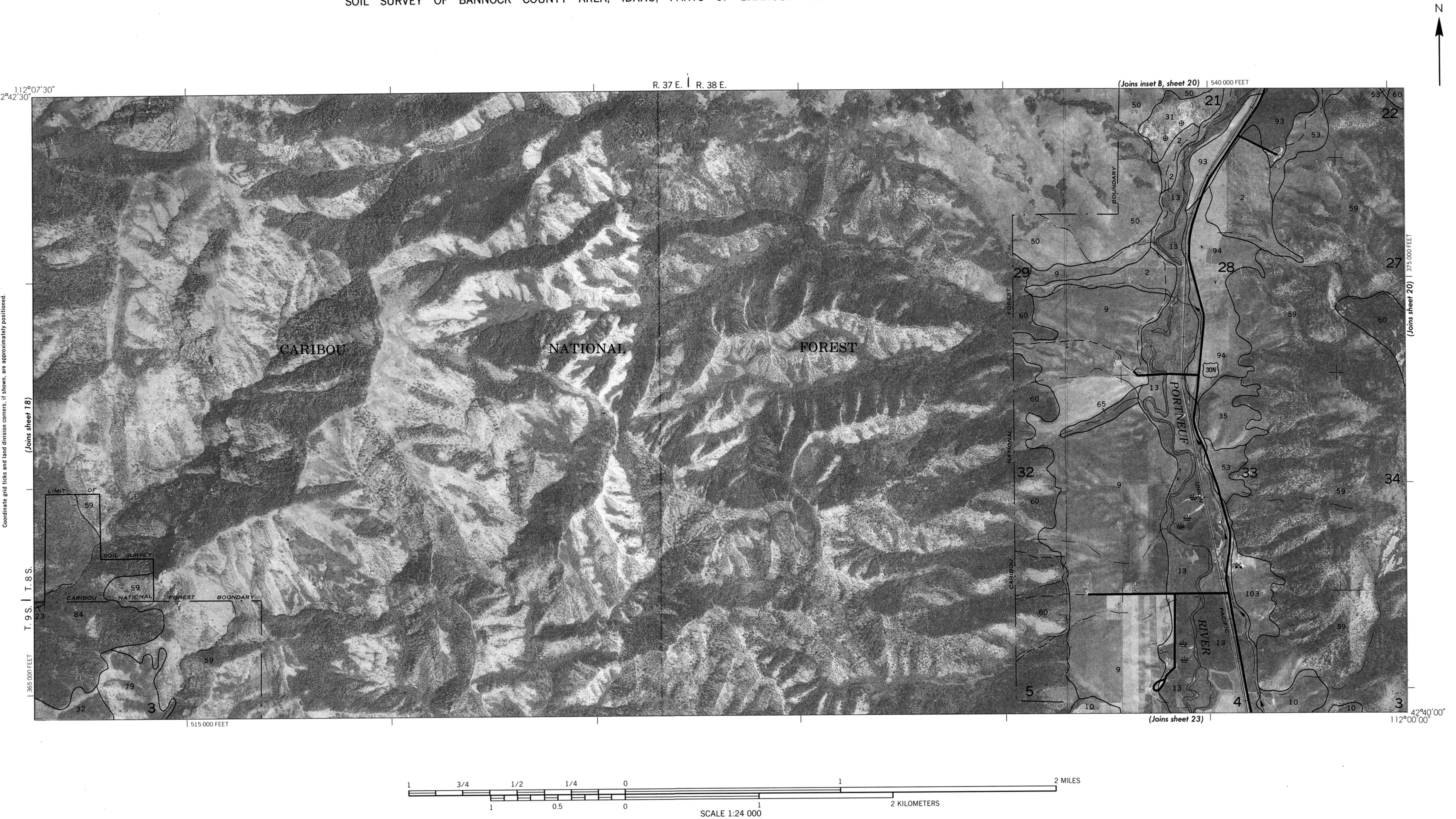
SCALE 1:24 000

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 19

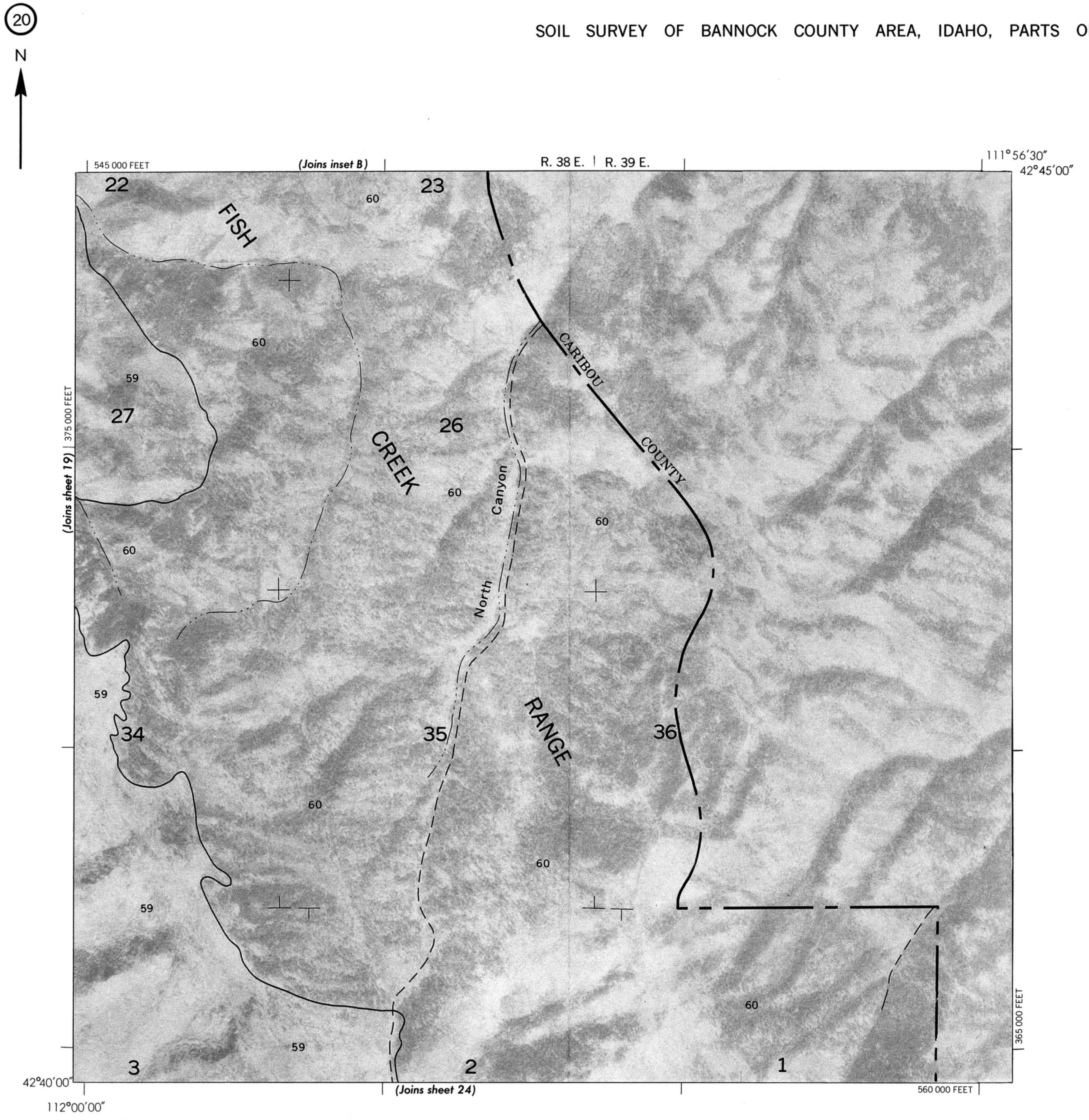
19

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 19

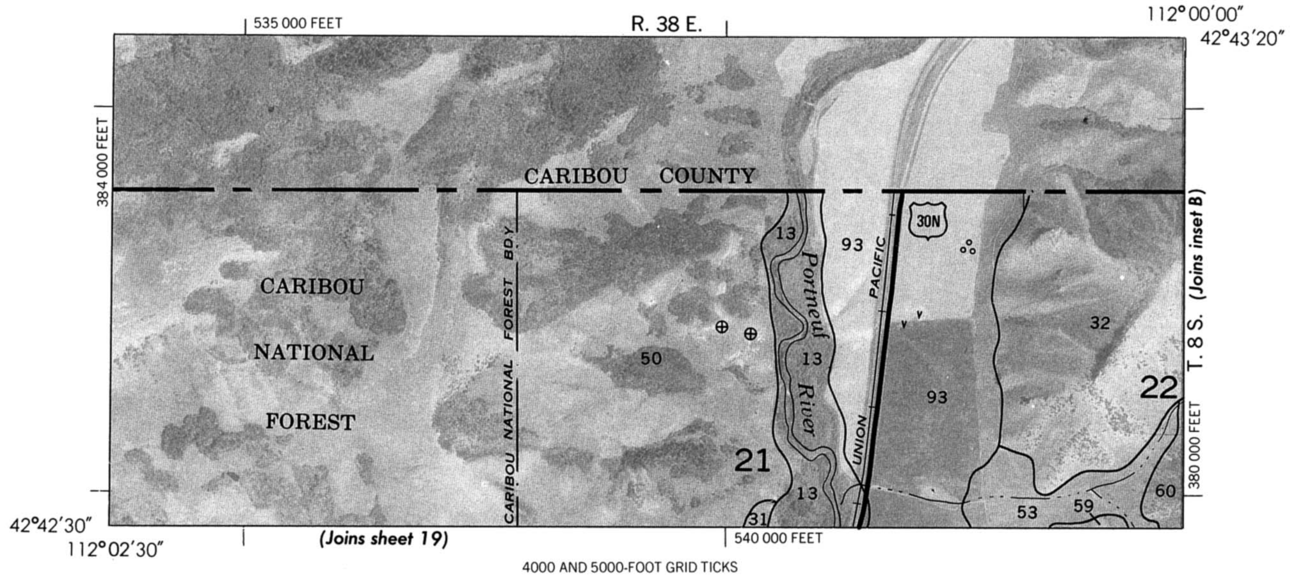
This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.



SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 20

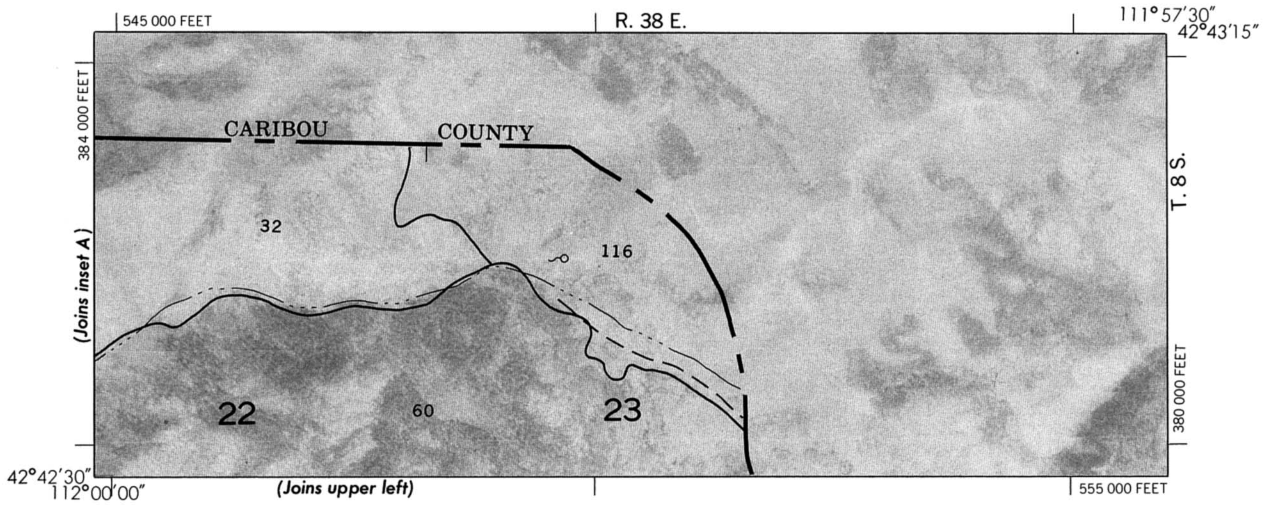


INSET A

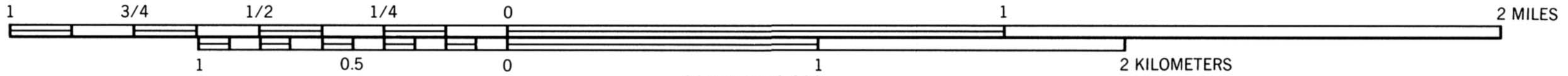


4000 AND 5000-FOOT GRID TICKS

INSET B



4000 AND 5000-FOOT GRID TICKS

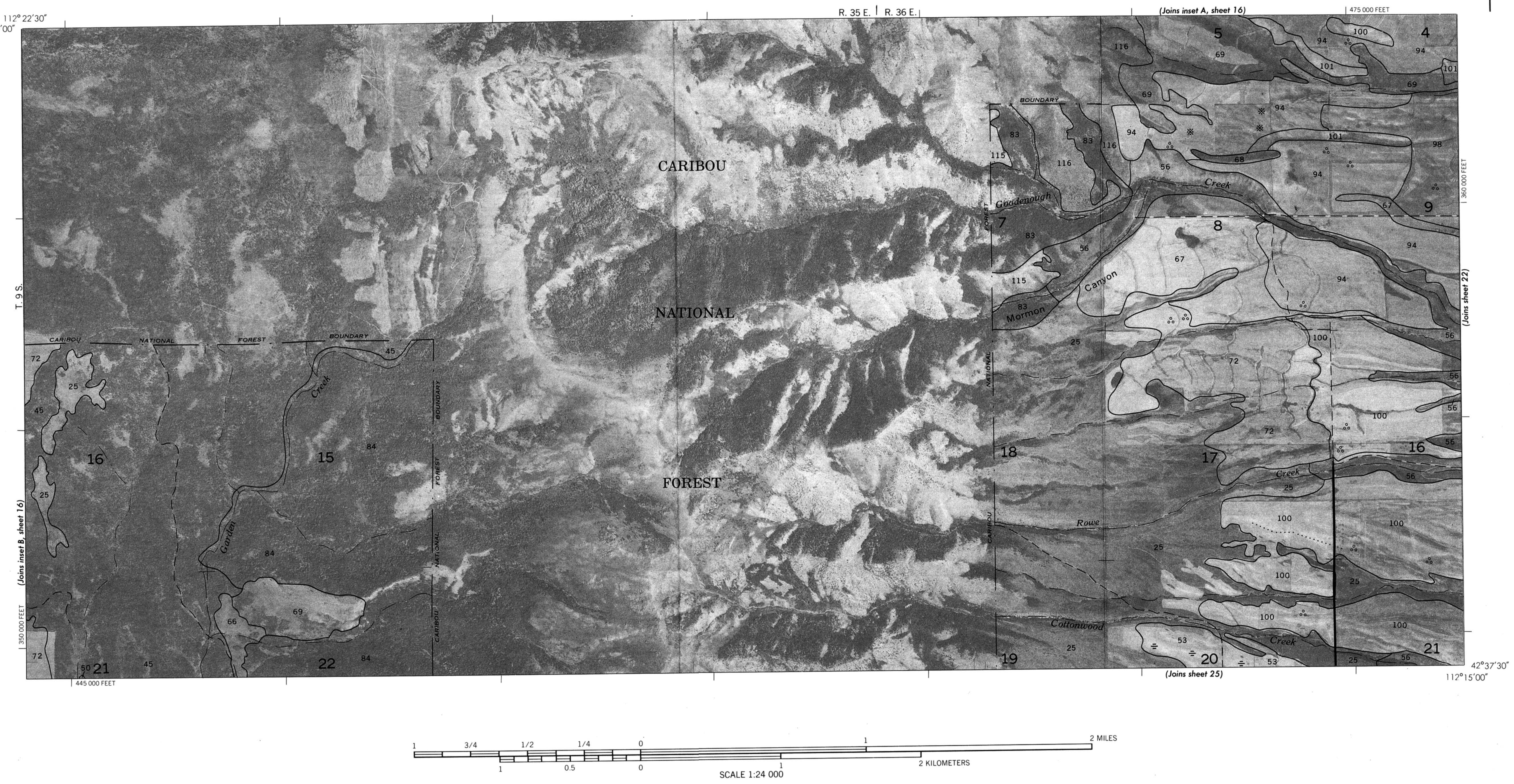


SCALE 1:24 000

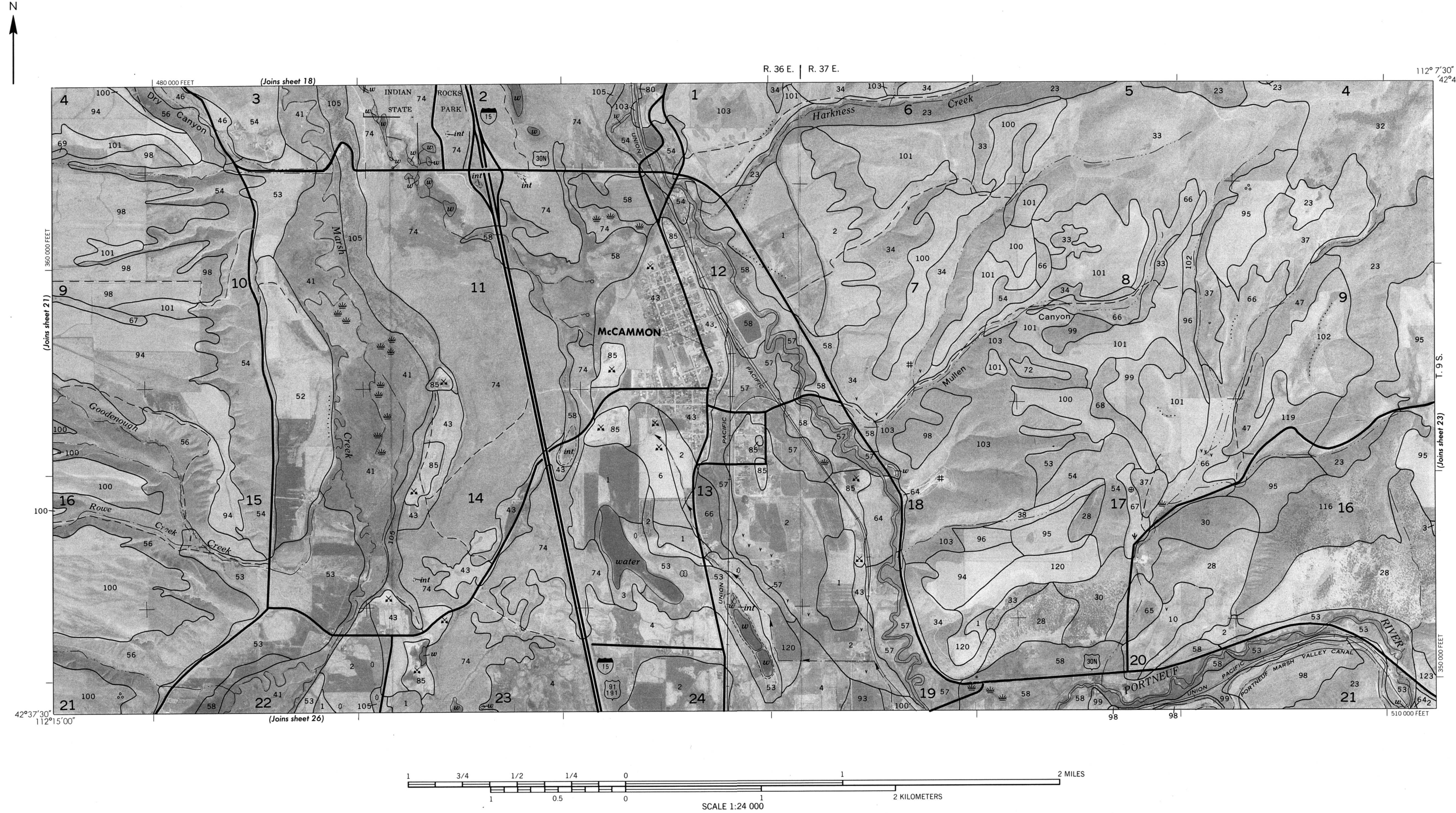
Coordinate grid ticks and land division corners, if shown, are approximately positioned.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 20

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.



SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 22



Coordinate grid ticks and land division corners, if shown, are approximately positioned.

Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 22

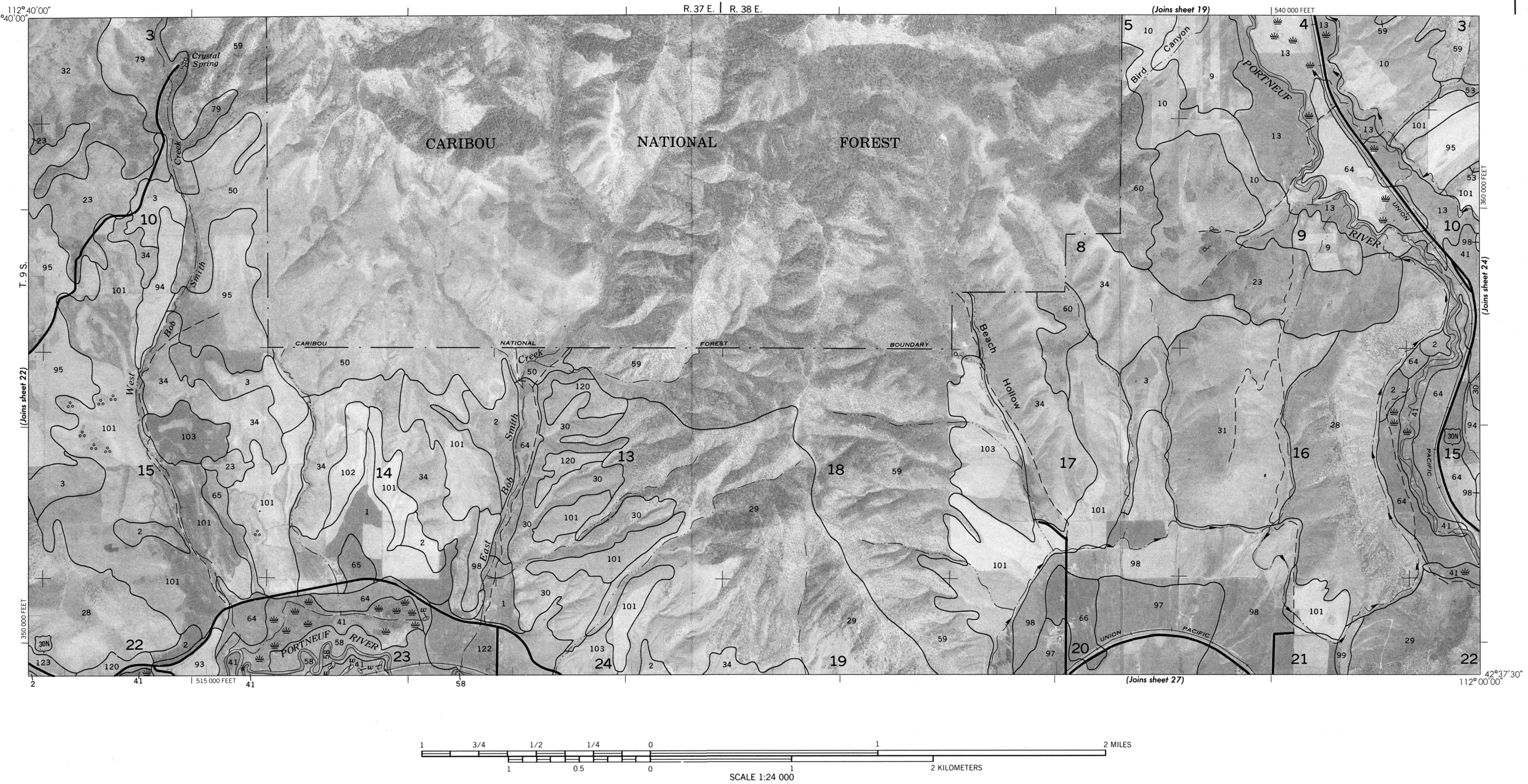
SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 23

23

N

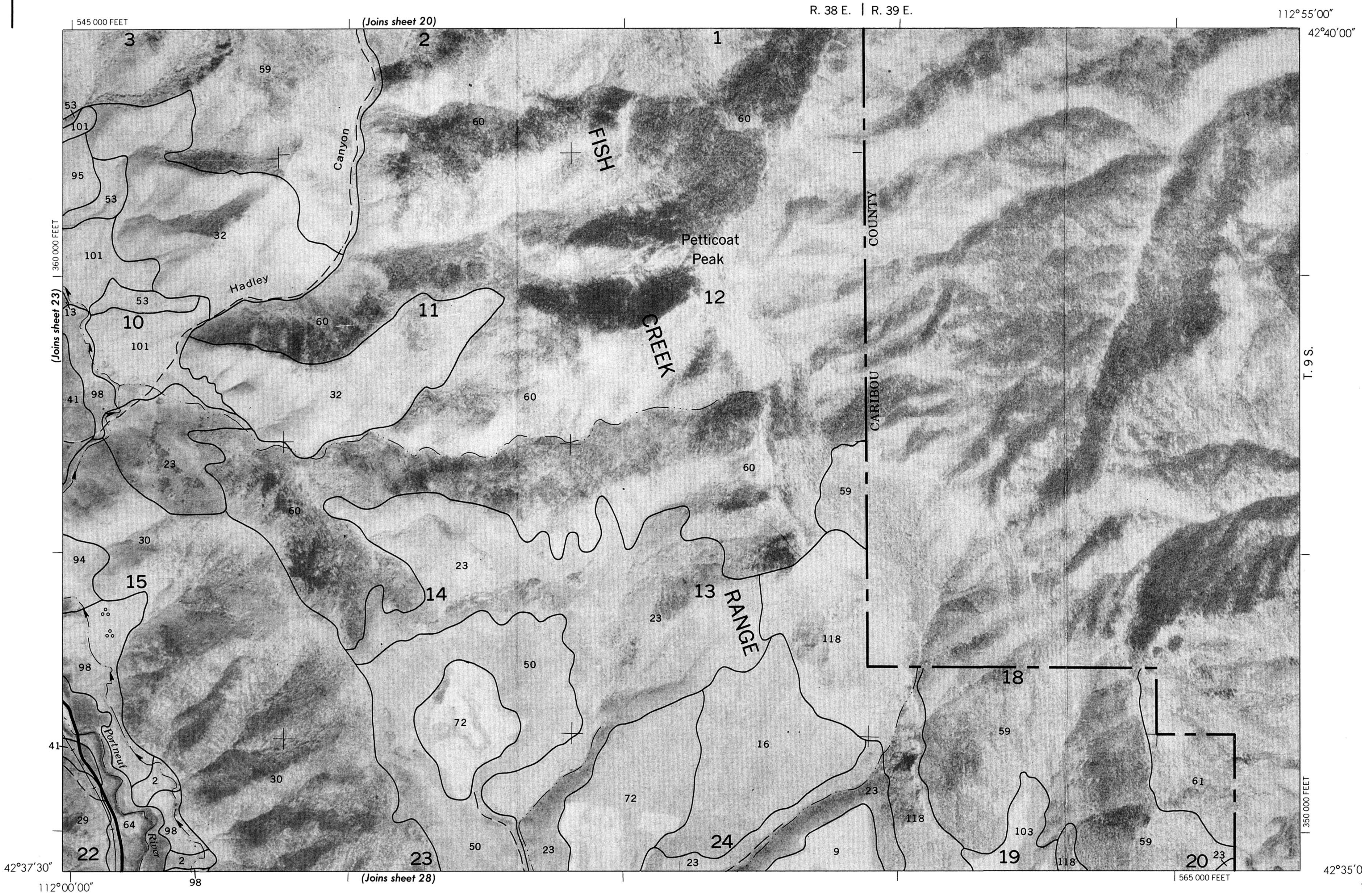
BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 23

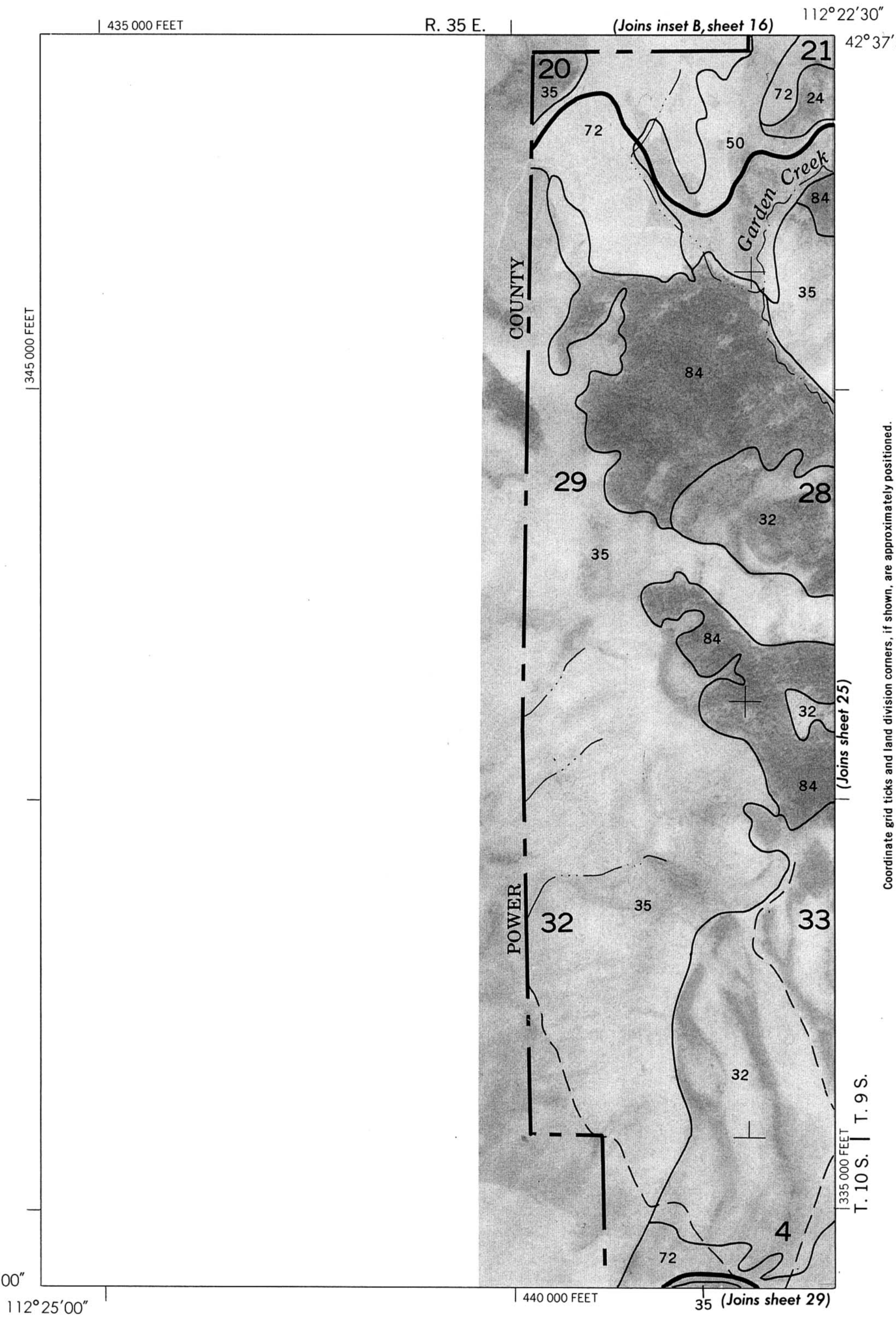
This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.



N

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 24





1 3/4 1/2 1/4 0 1 2 MILES

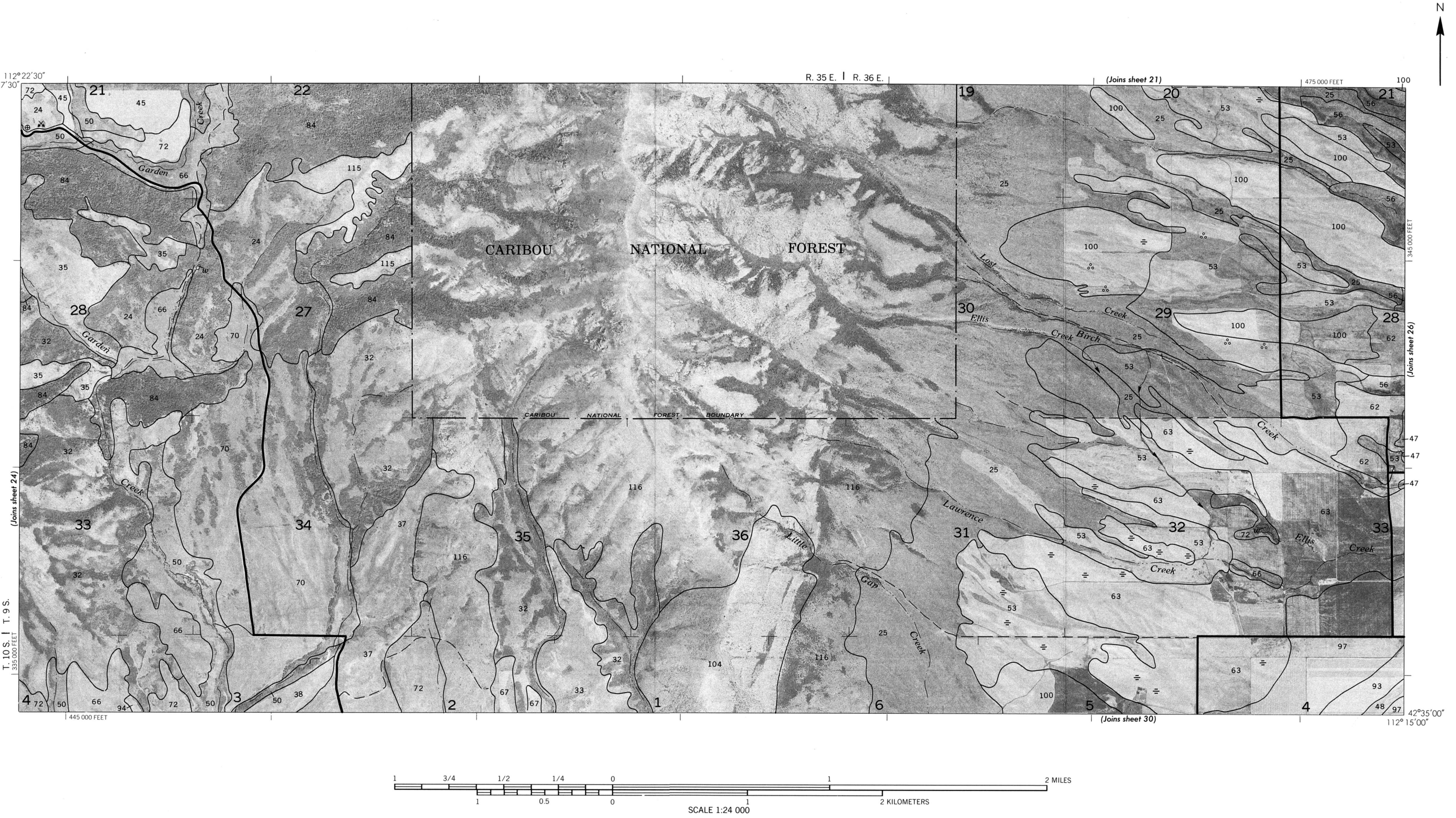
1 0.5 0 1 2 KILOMETERS

SCALE 1:24 000

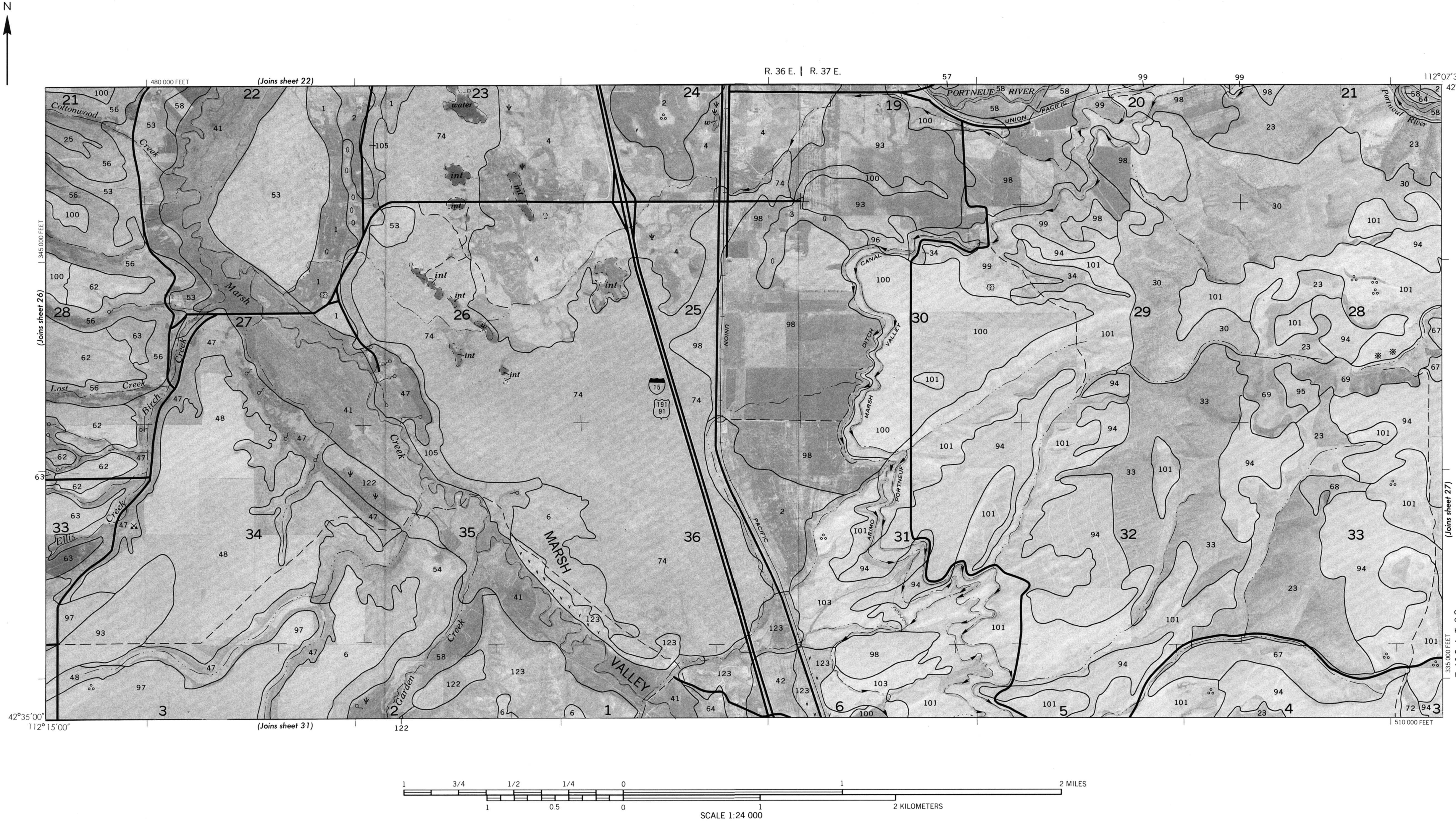
Coordinate grid ticks and land division corners, if shown, are approximately positioned.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 25

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.



SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 26



BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 26

Coordinate grid ticks and land division corners, if shown, are approximately positioned.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 27

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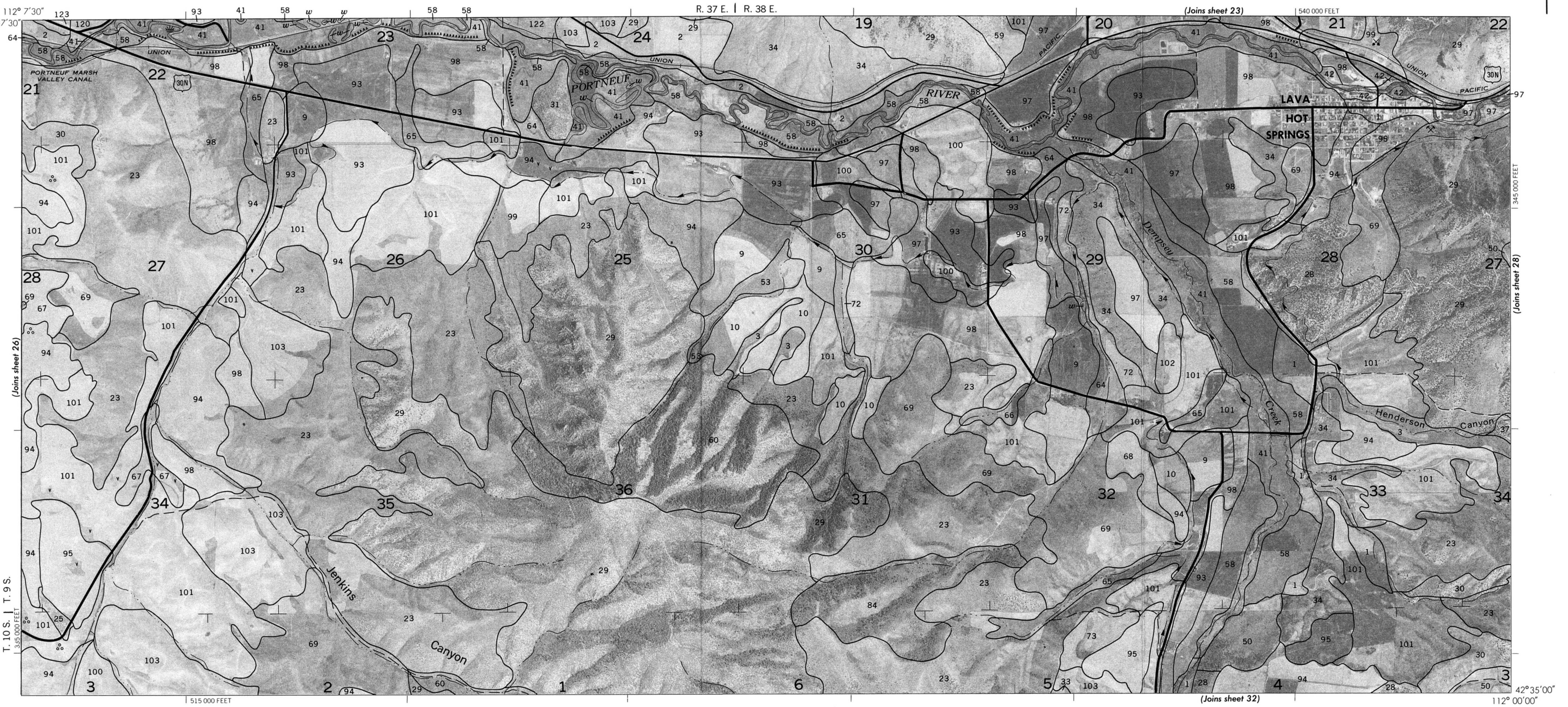
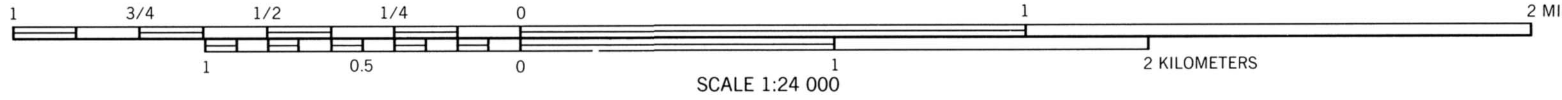
BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 27

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

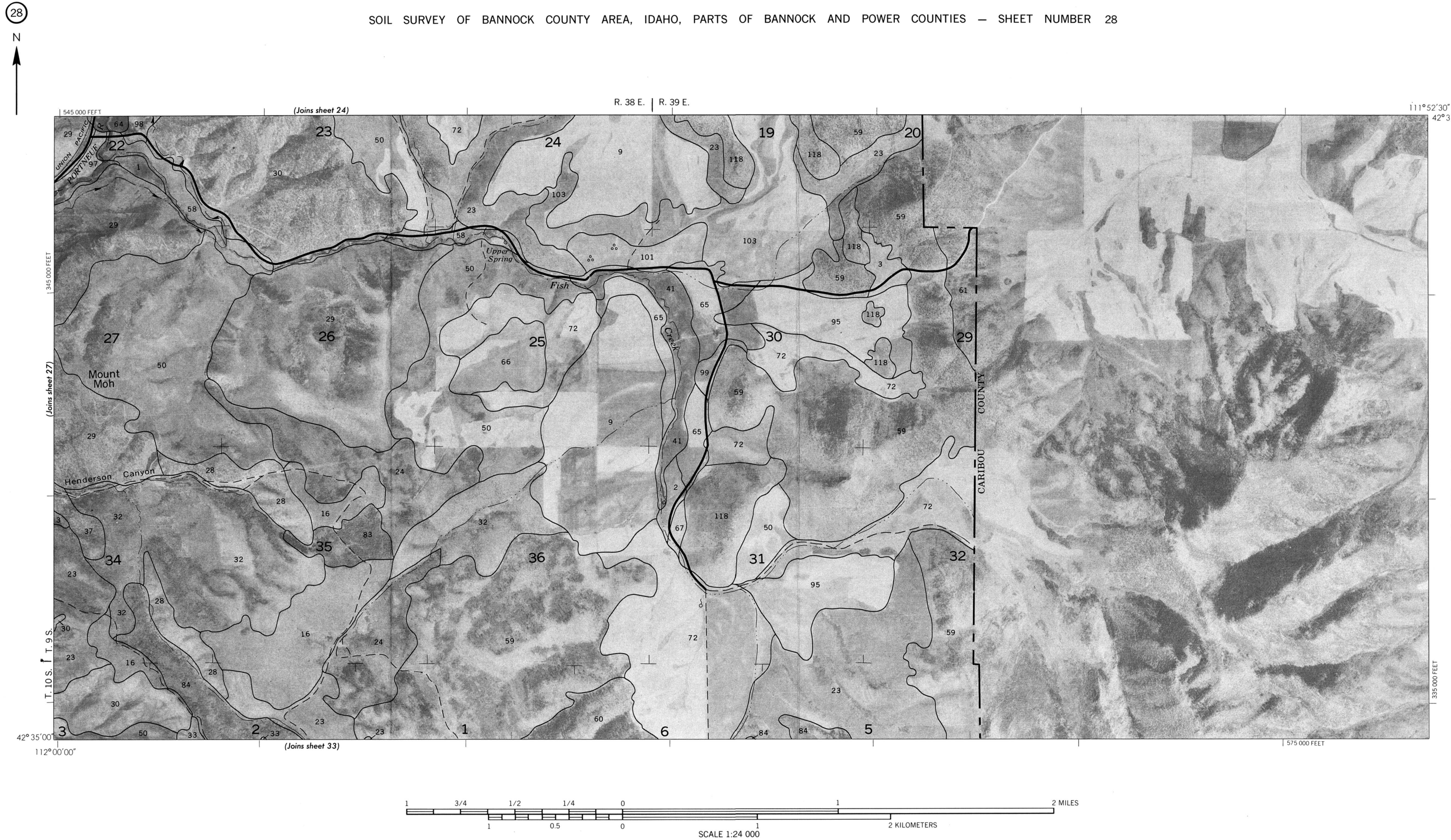




SCALE 1:24 000

28

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 28



Coordinate grid ticks and land division corners, if shown, are approximately positioned.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 28

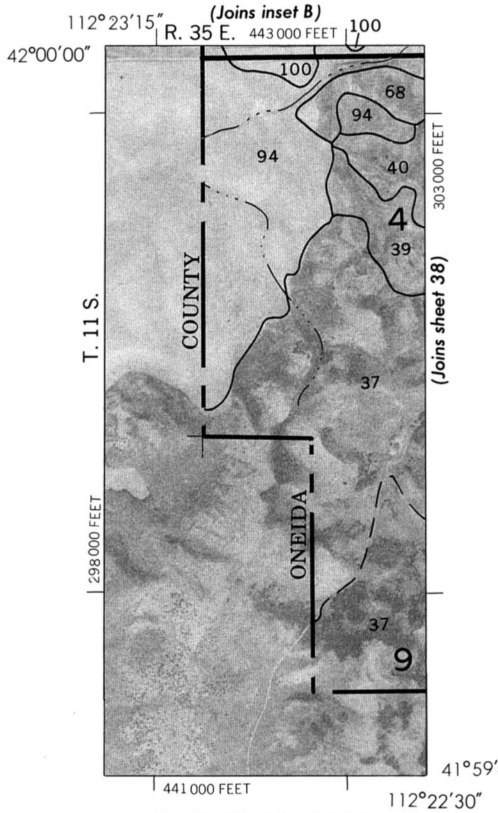
SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 29

N

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 29

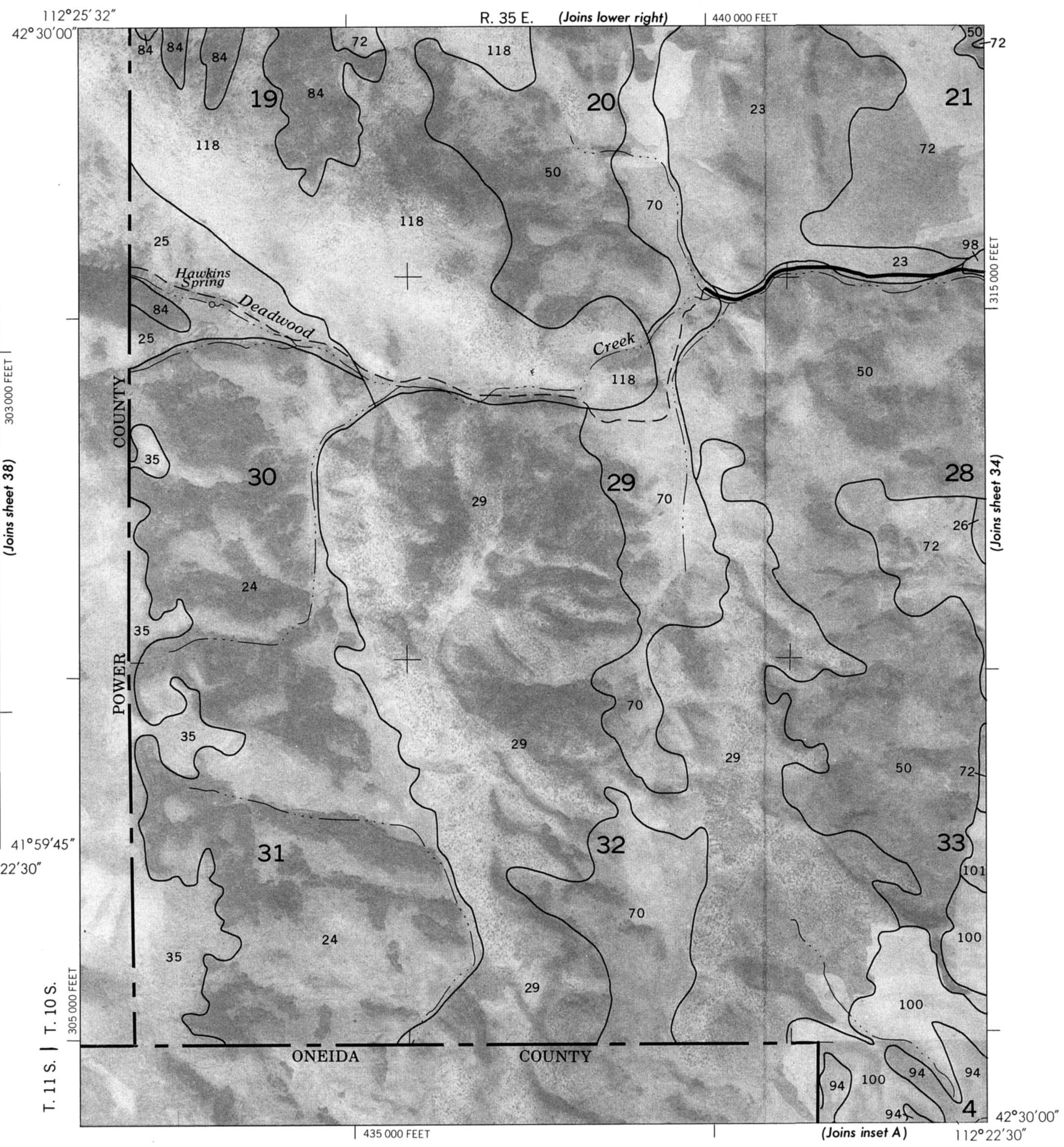
This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

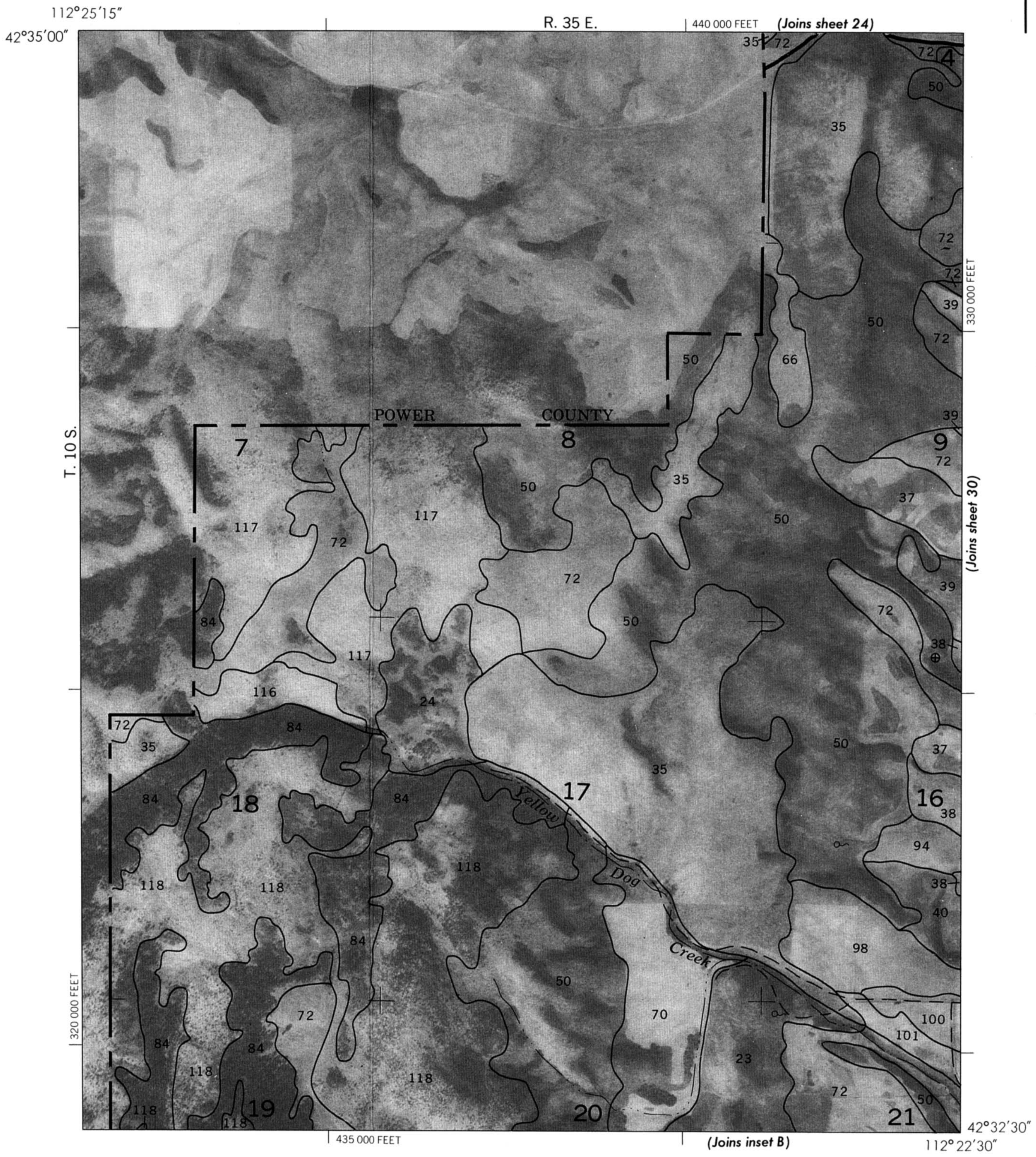
INSET A



2000 AND 5000-FOOT GRID TICKS

INSET B





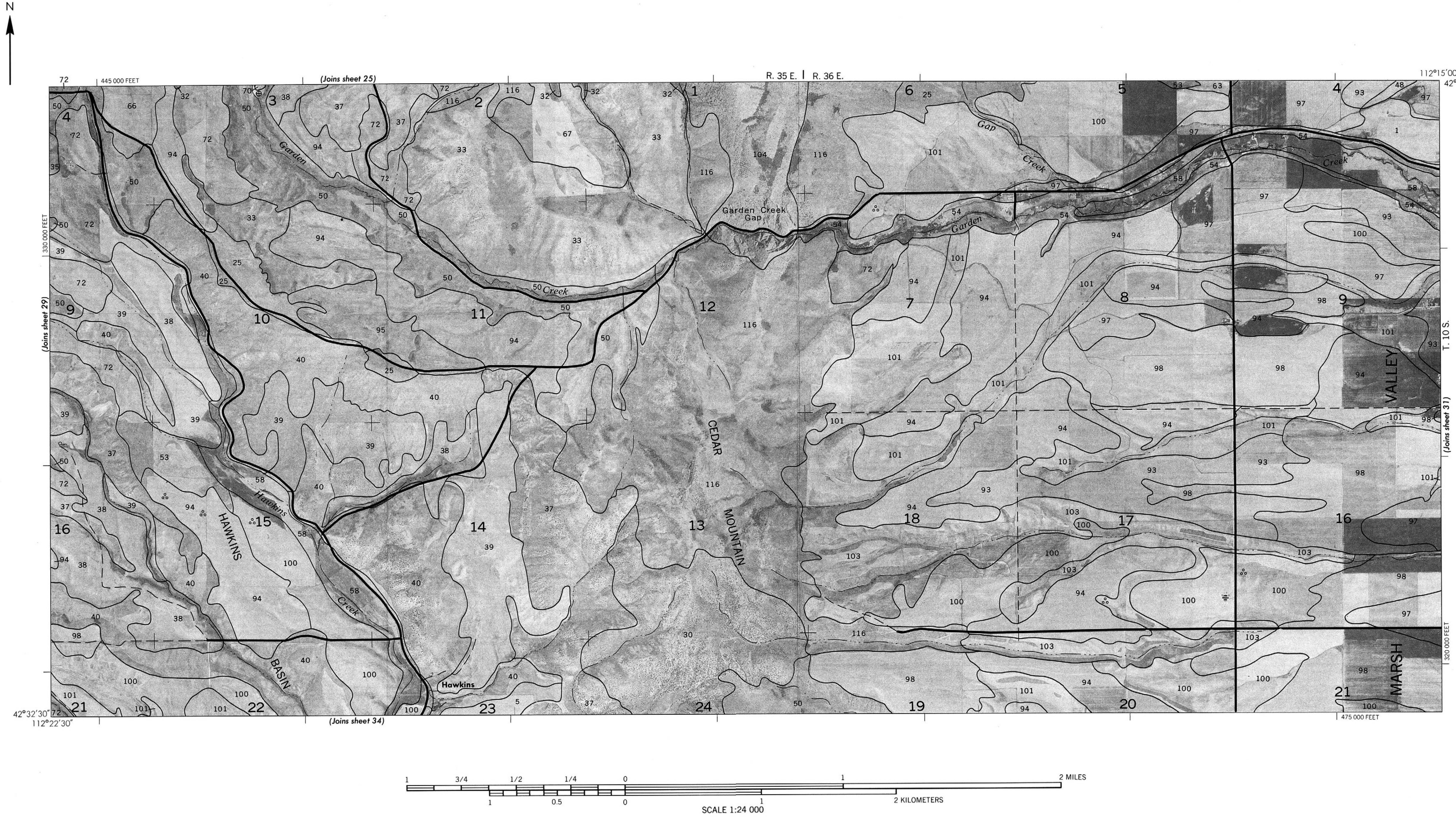
1 3/4 1/2 1/4 0 1 2 MILES

1 0.5 0 1 2 KILOMETERS

SCALE 1:24 000

30

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 30



Coordinate grid ticks and land division corners, if shown, are approximately positioned.

Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.

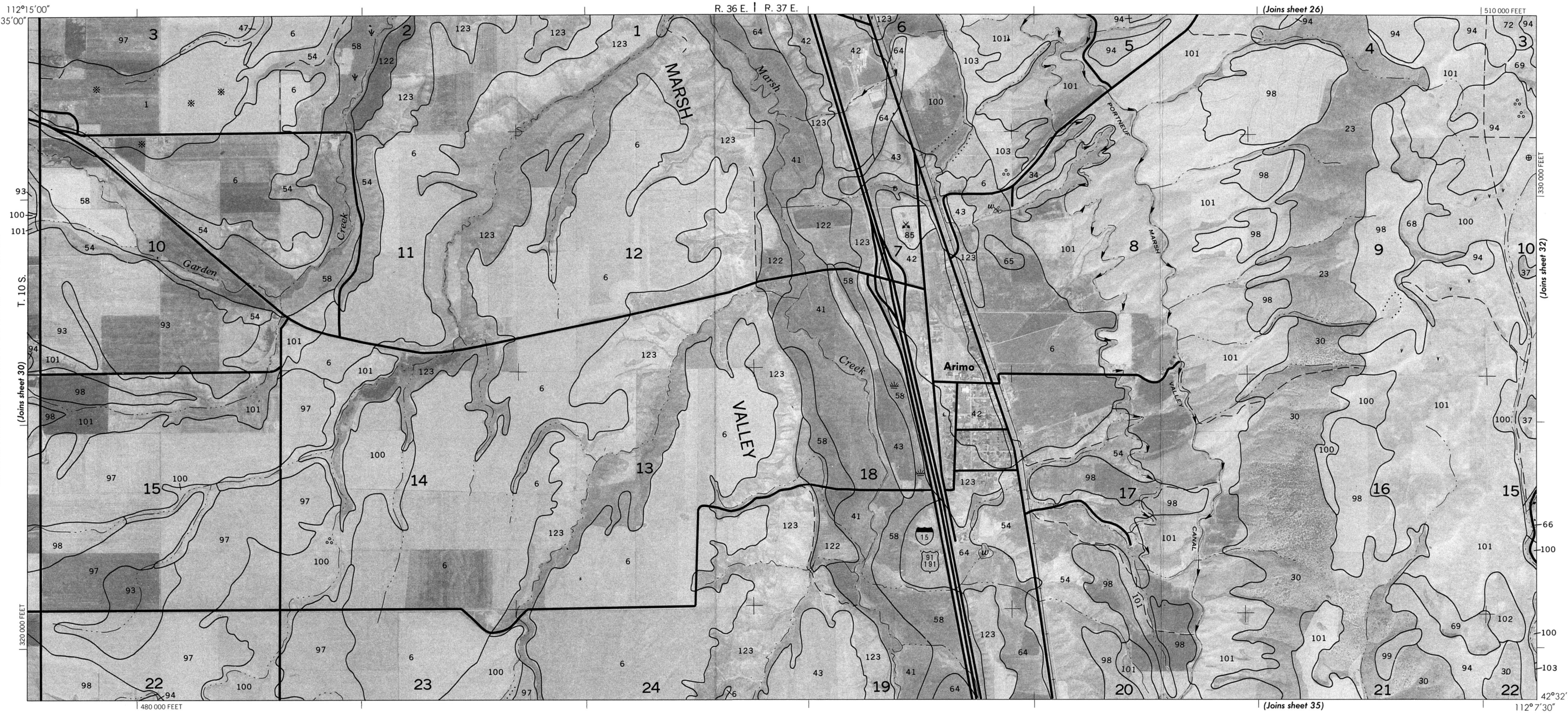
BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 30

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 31

N

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 31

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

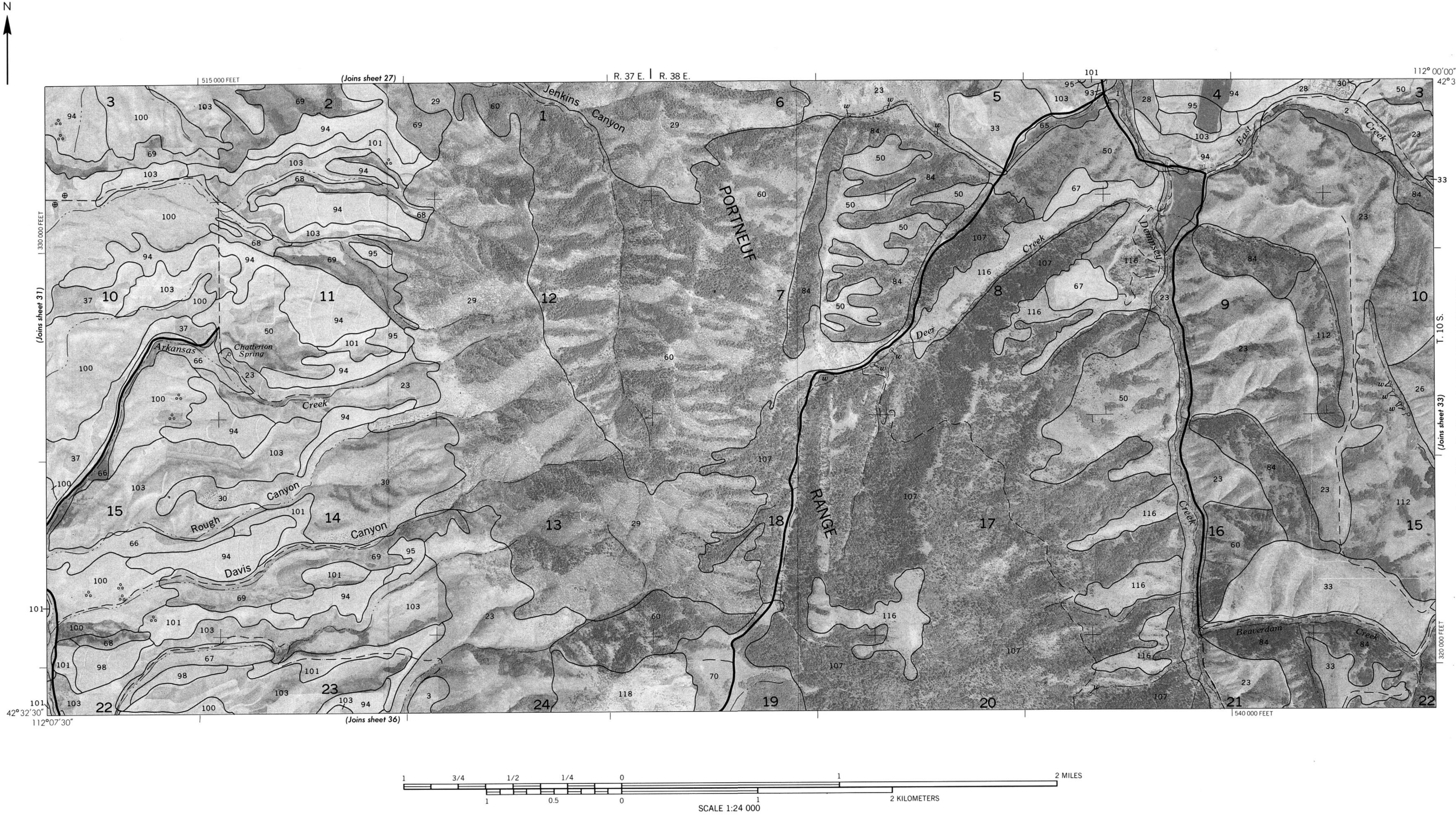


1 3/4 1/2 1/4 0 1 2 MILES

1 0.5 0 1 2 KILOMETERS

SCALE 1:24 000

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 32



Coordinate grid ticks and land division corners, if shown, are approximately positioned.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 32

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 33

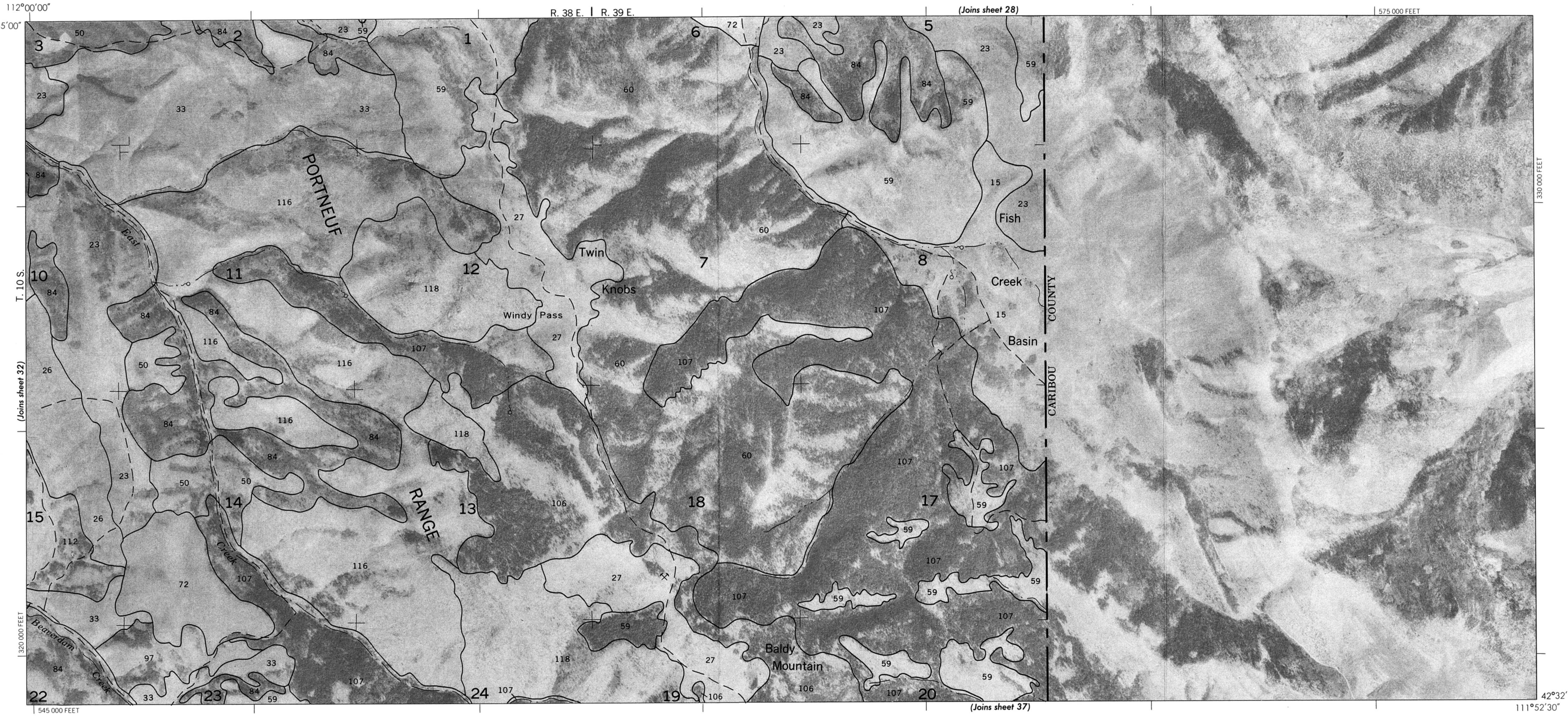
N

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 33

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.

Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.

Coordinate grid ticks and land division corners, if shown, are approximately positioned.

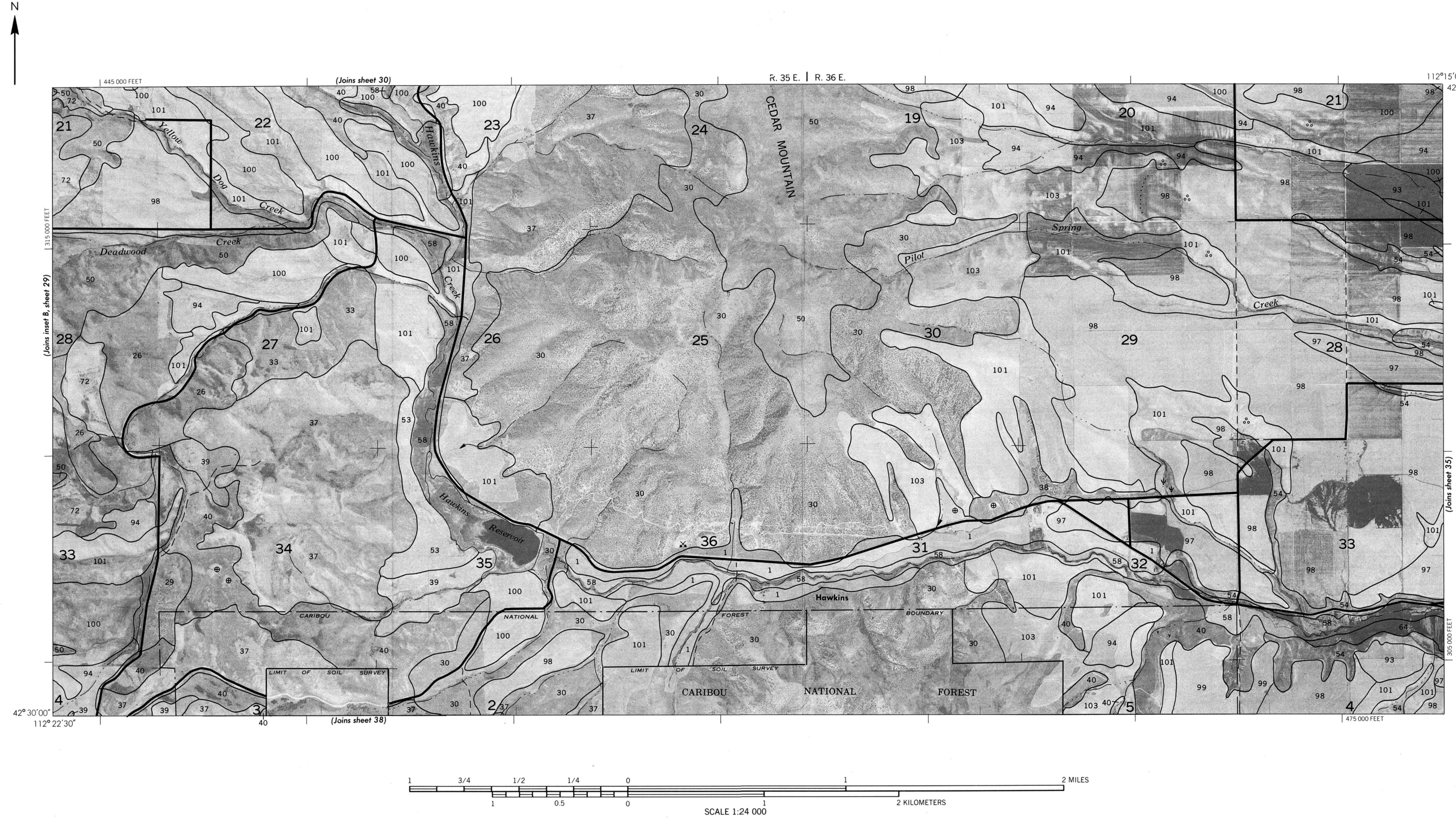


1 3/4 1/2 1/4 0 1 2 MILES

1 0.5 0 1 2 KILOMETERS

SCALE 1:24 000

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 34



Coordinate grid ticks and land division corners, if shown, are approximately positioned.

Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.

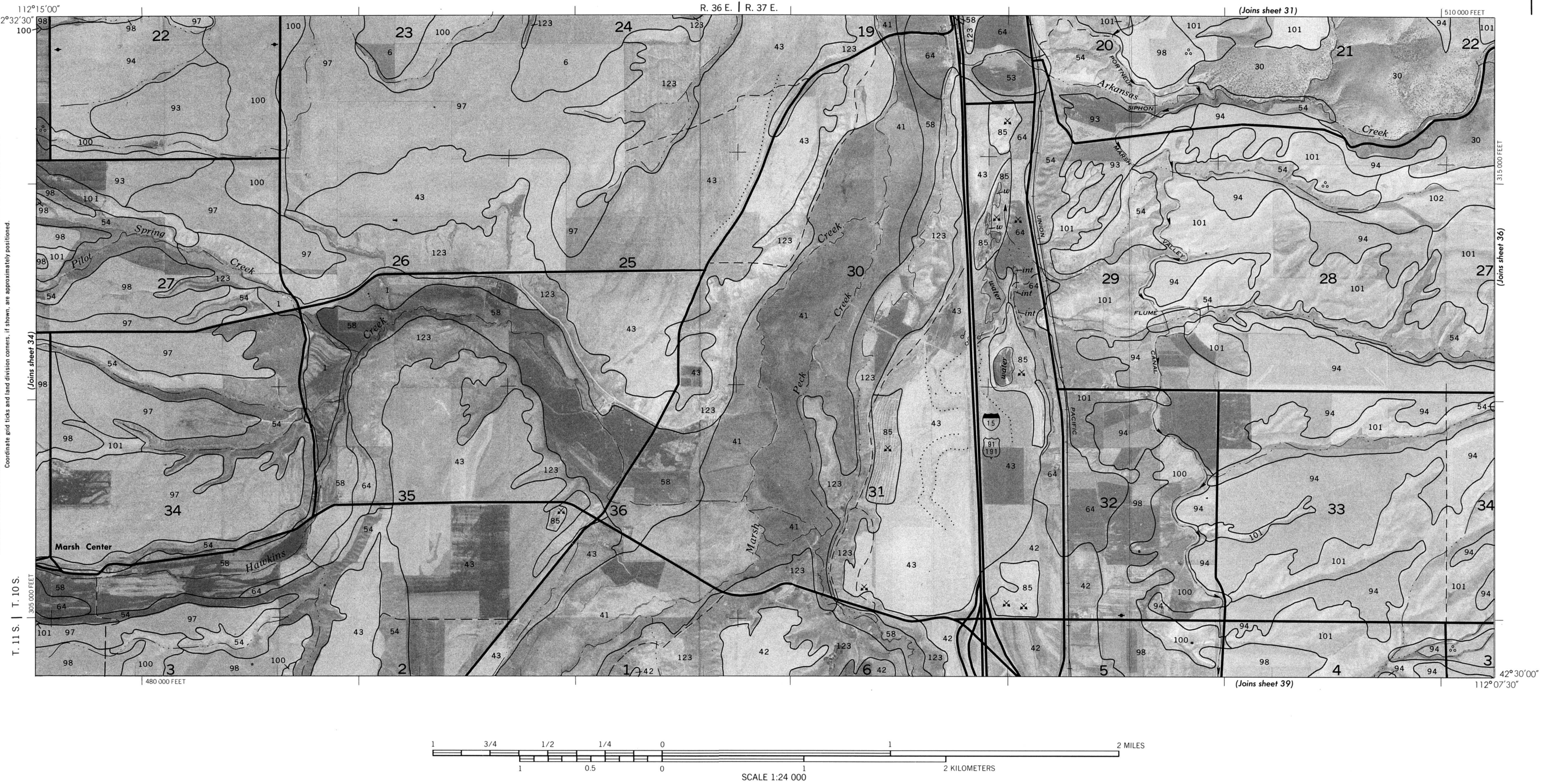
This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 34

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 35

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 35

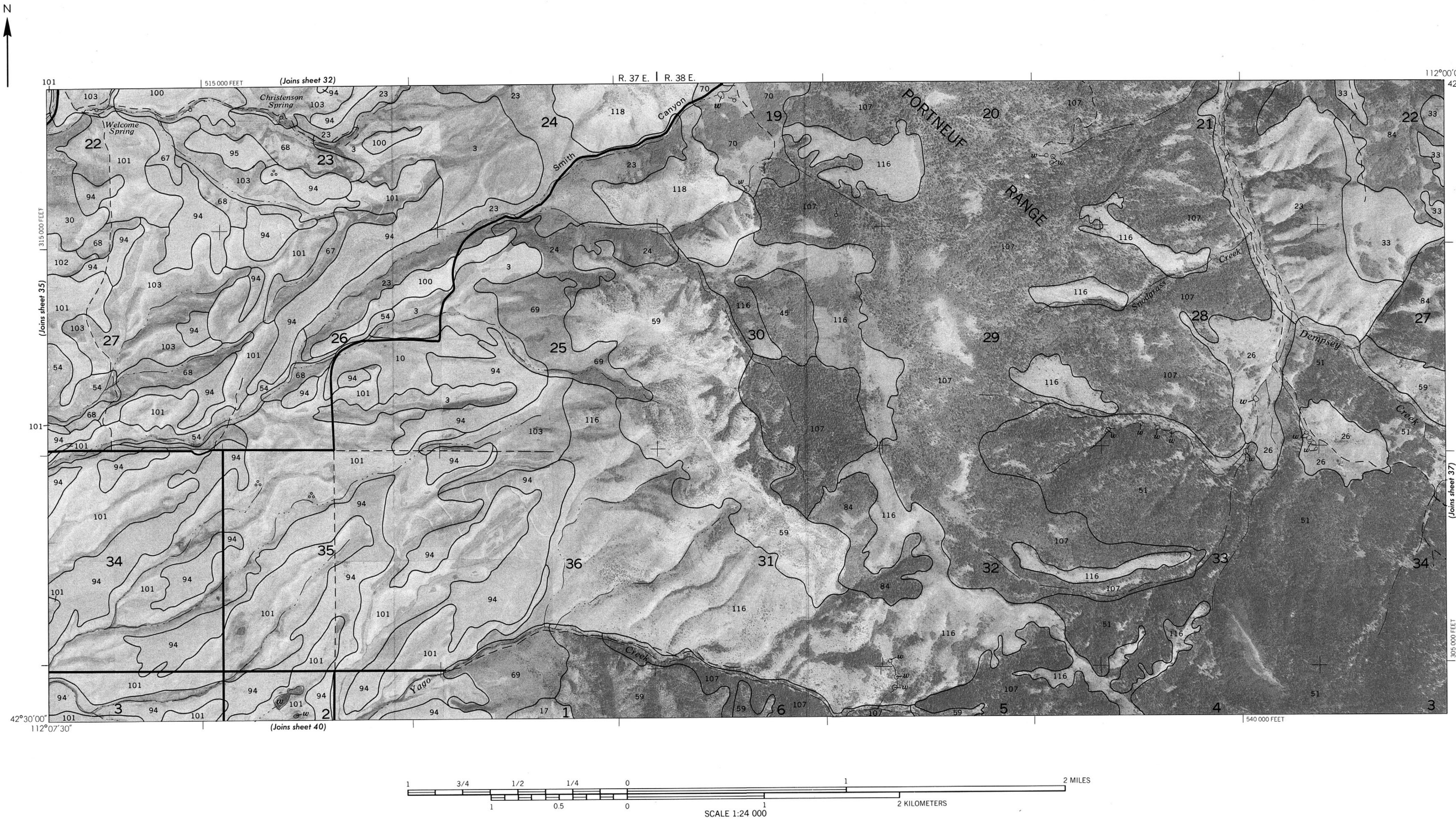
This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.



35

N

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 36



Coordinate grid ticks and land division corners, if shown, are approximately positioned.

Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.

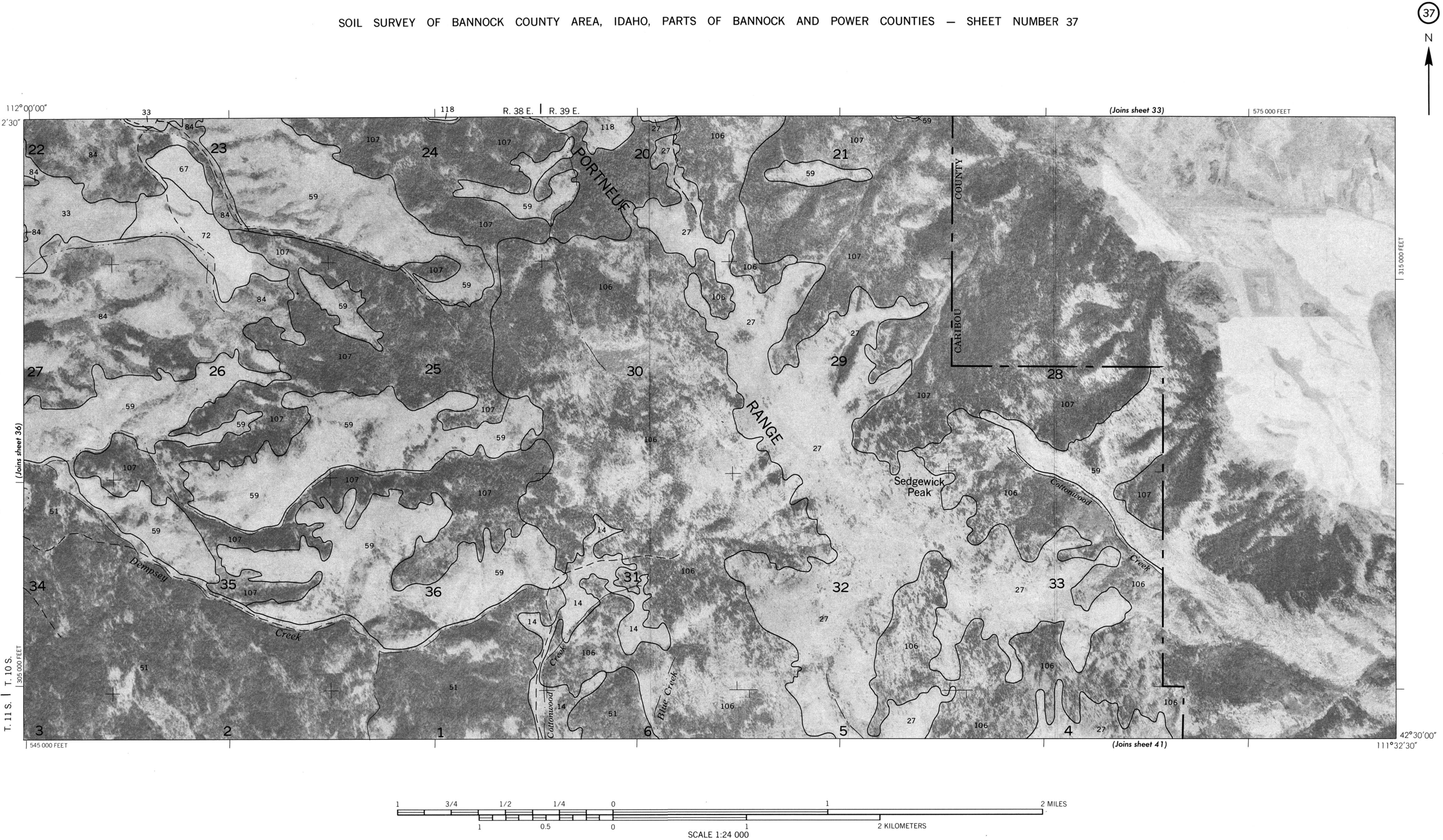
SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 37

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 37

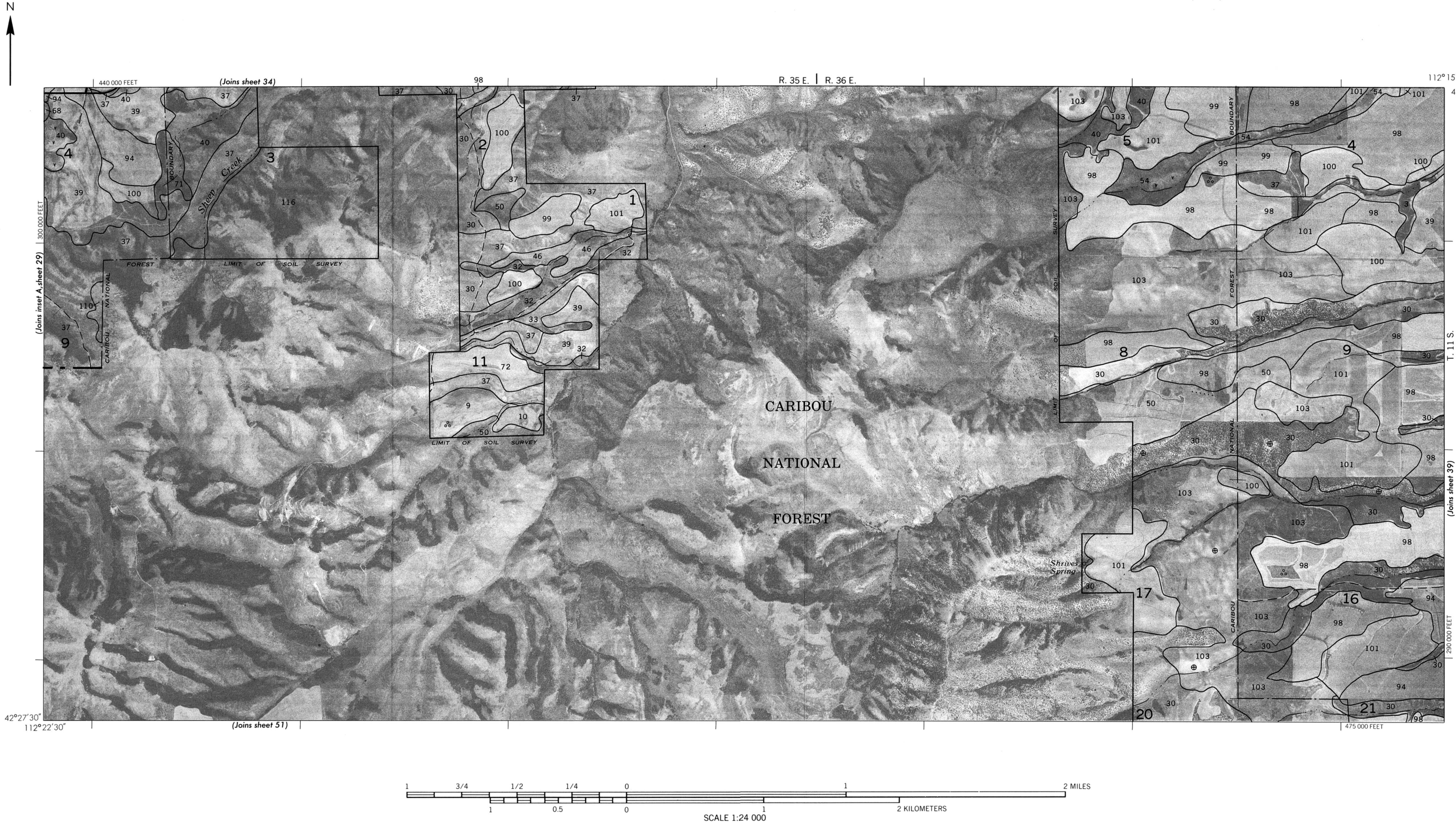
This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.

Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.

Coordinate grid ticks and land division corners, if shown, are approximately positioned.



SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 38



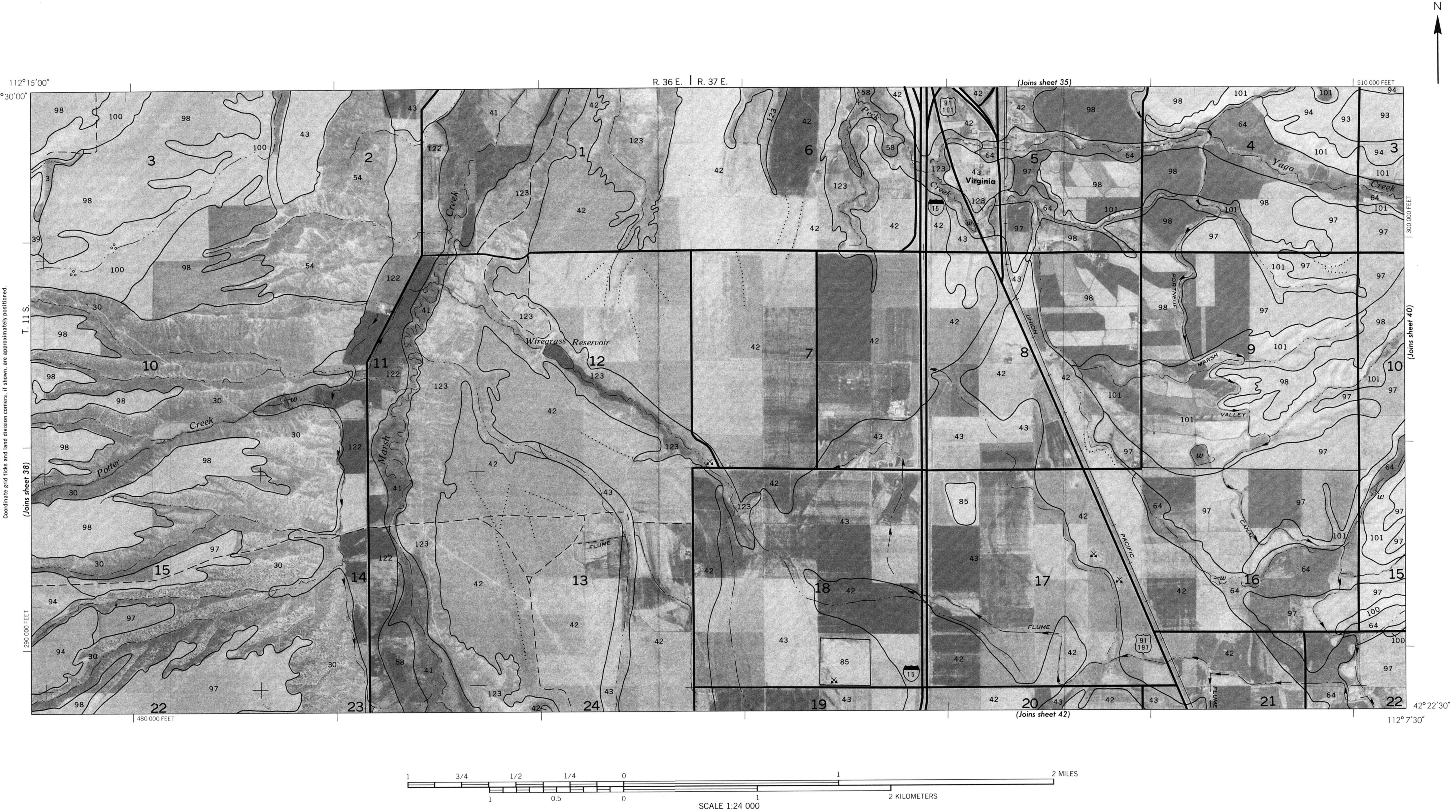
SCALE 1:24 000

Coordinate grid ticks and land division corners, if shown, are approximately positioned.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 39

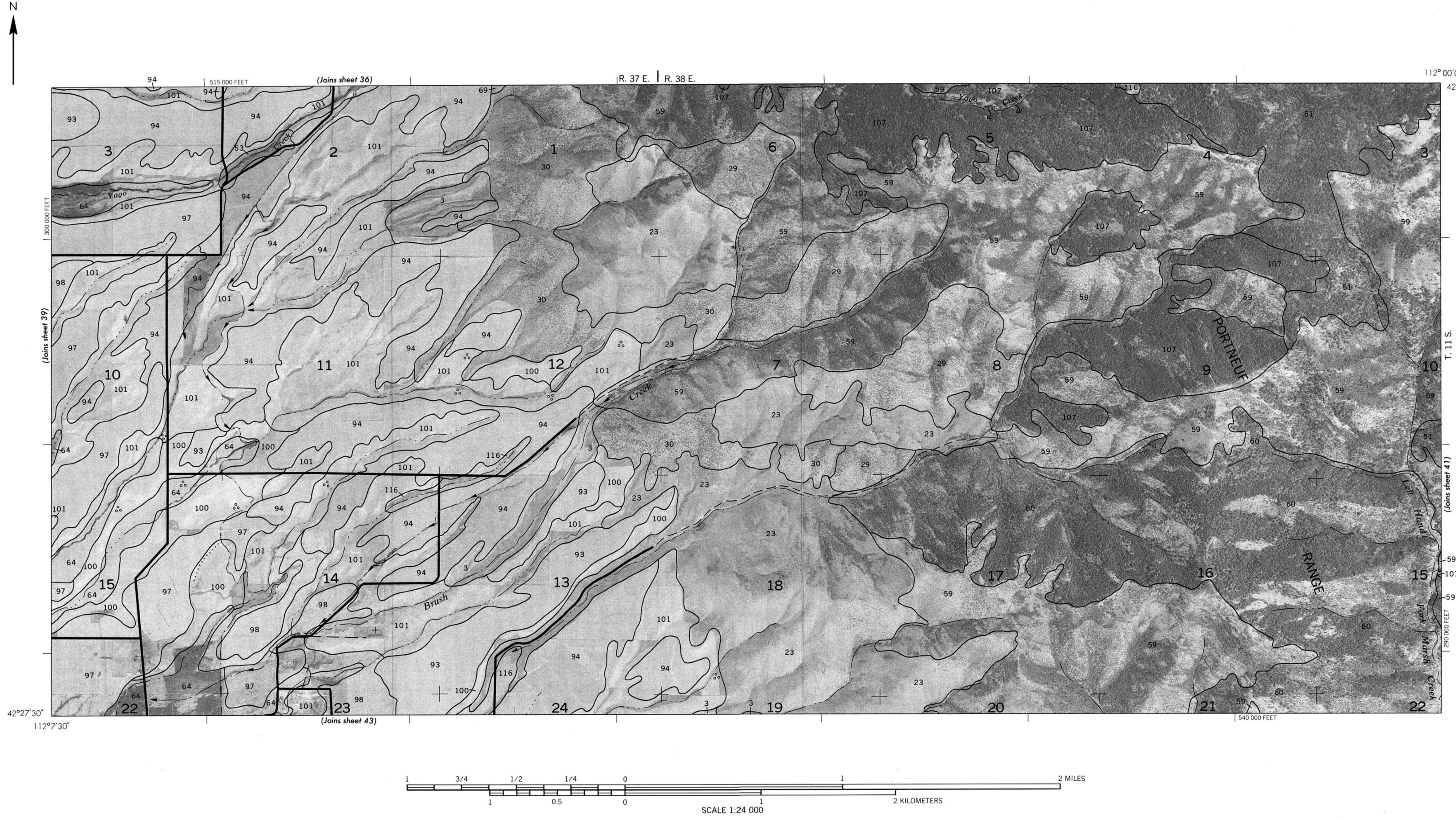
BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 39

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.



(40)

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 40



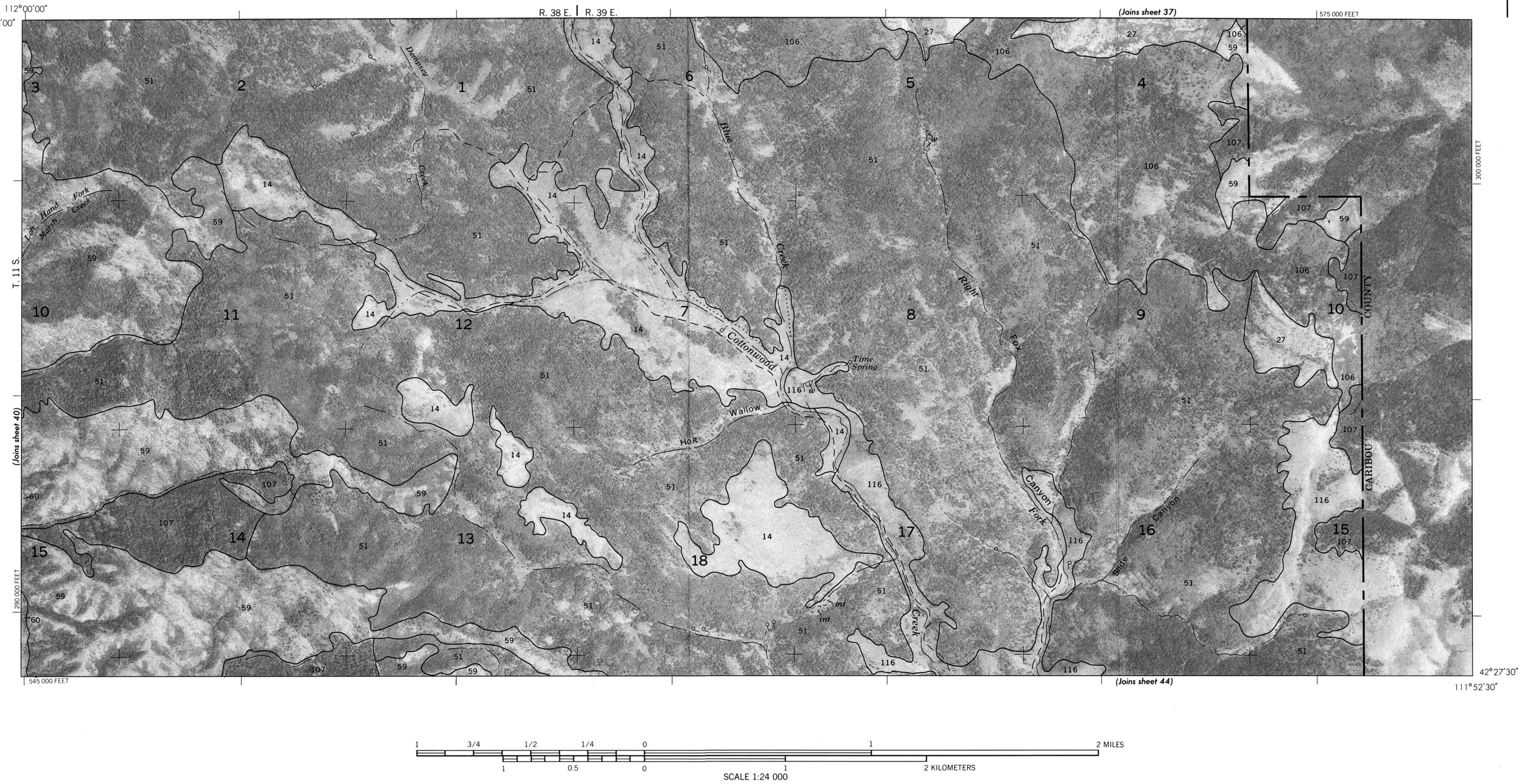
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 40

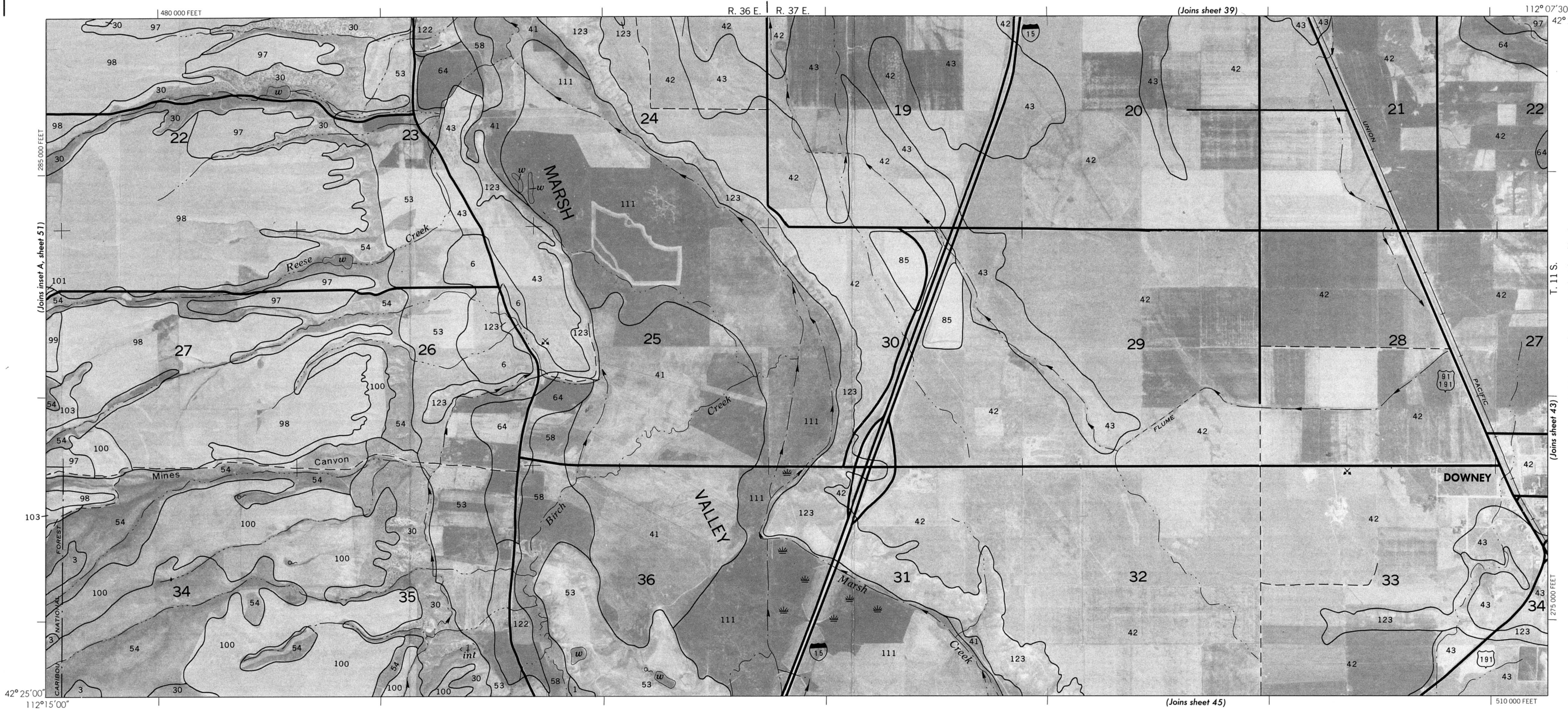
This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.



42

N

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 42



1 3/4 1/2 1/4 0 1 2 MILES

1 0.5 0 1 2 KILOMETERS

SCALE 1:24 000

Coordinate grid ticks and land division corners, if shown, are approximately positioned.

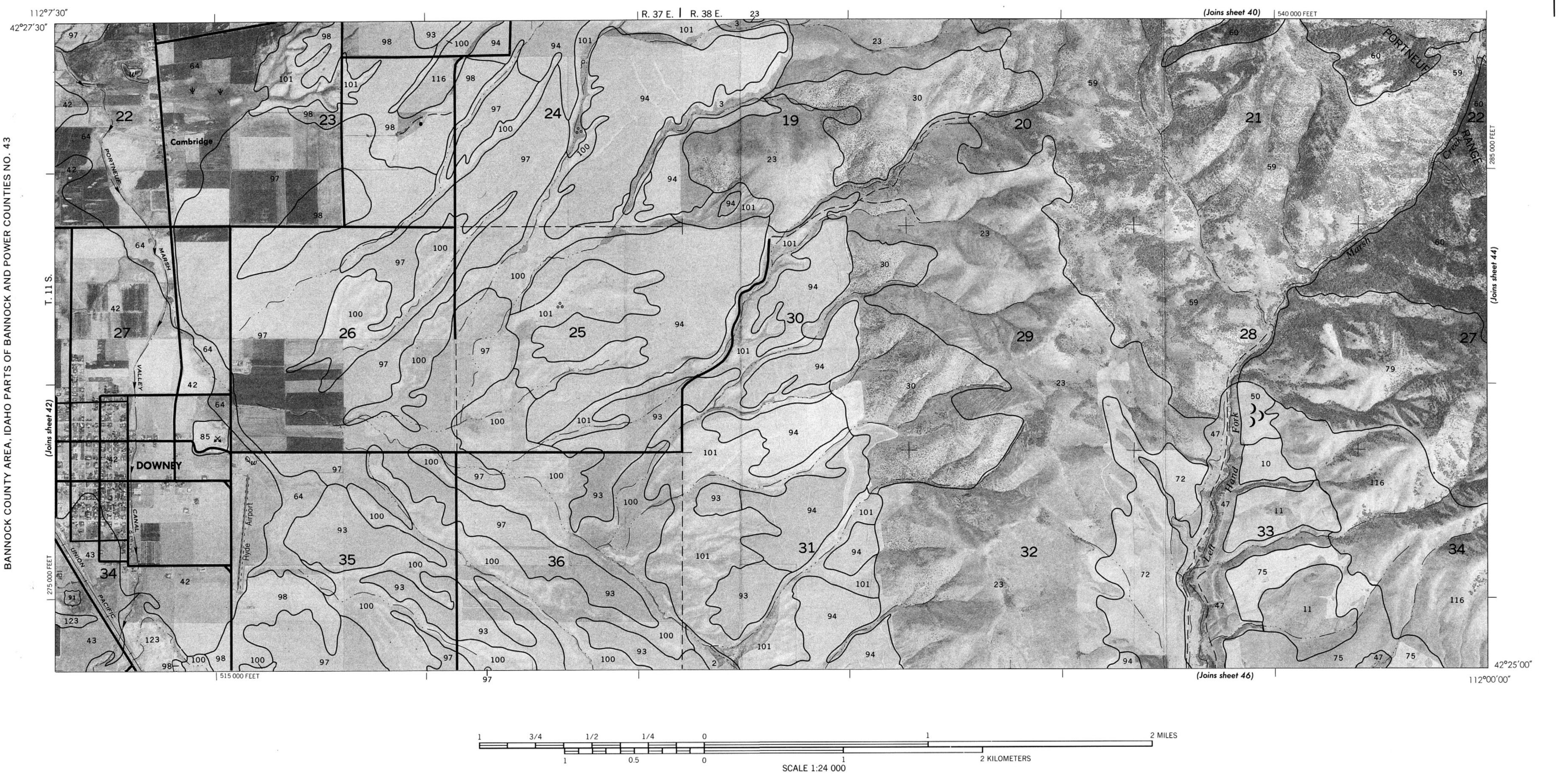
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 43

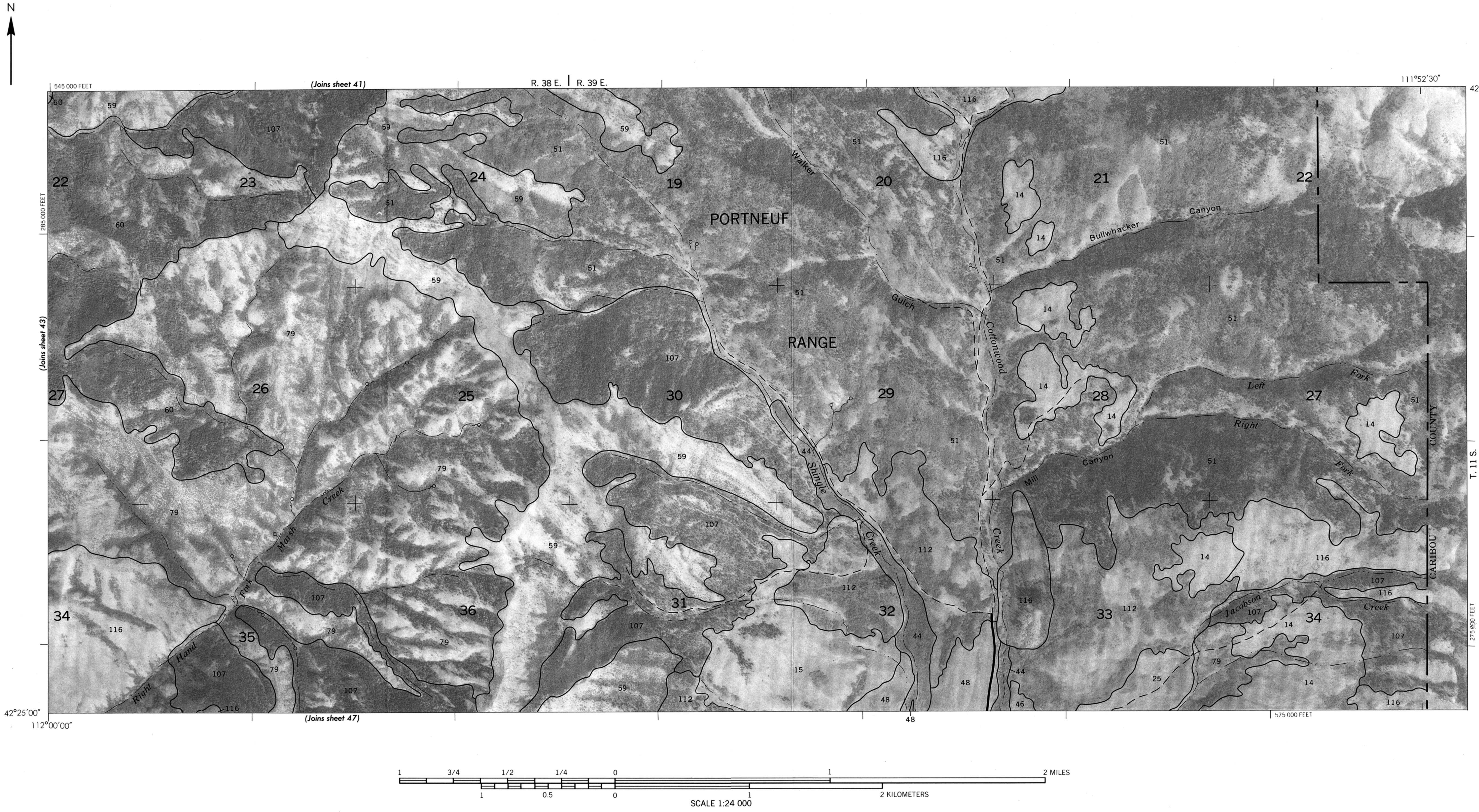
43

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 43



44

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 44



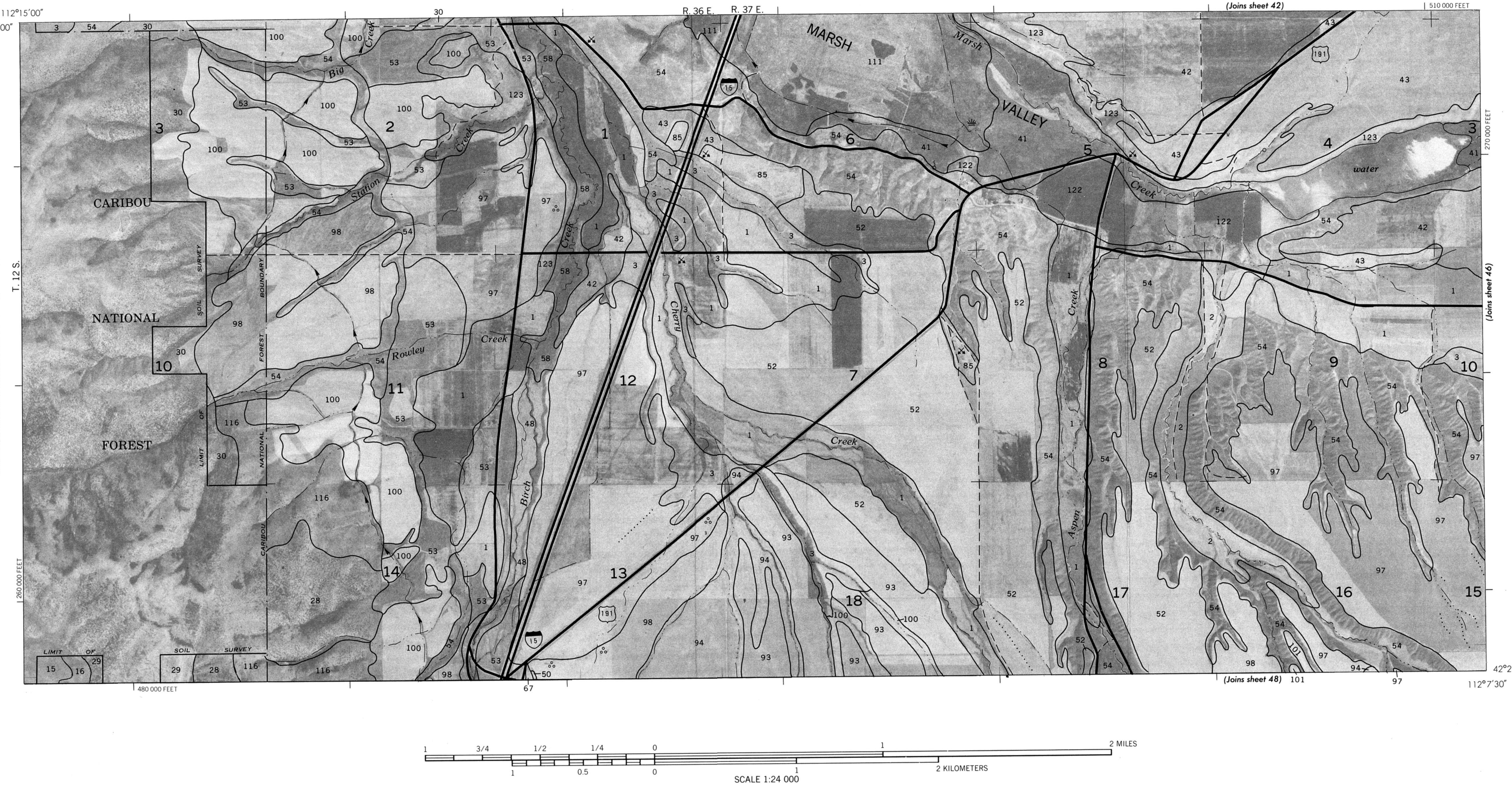
SCALE 1:24 000

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 44

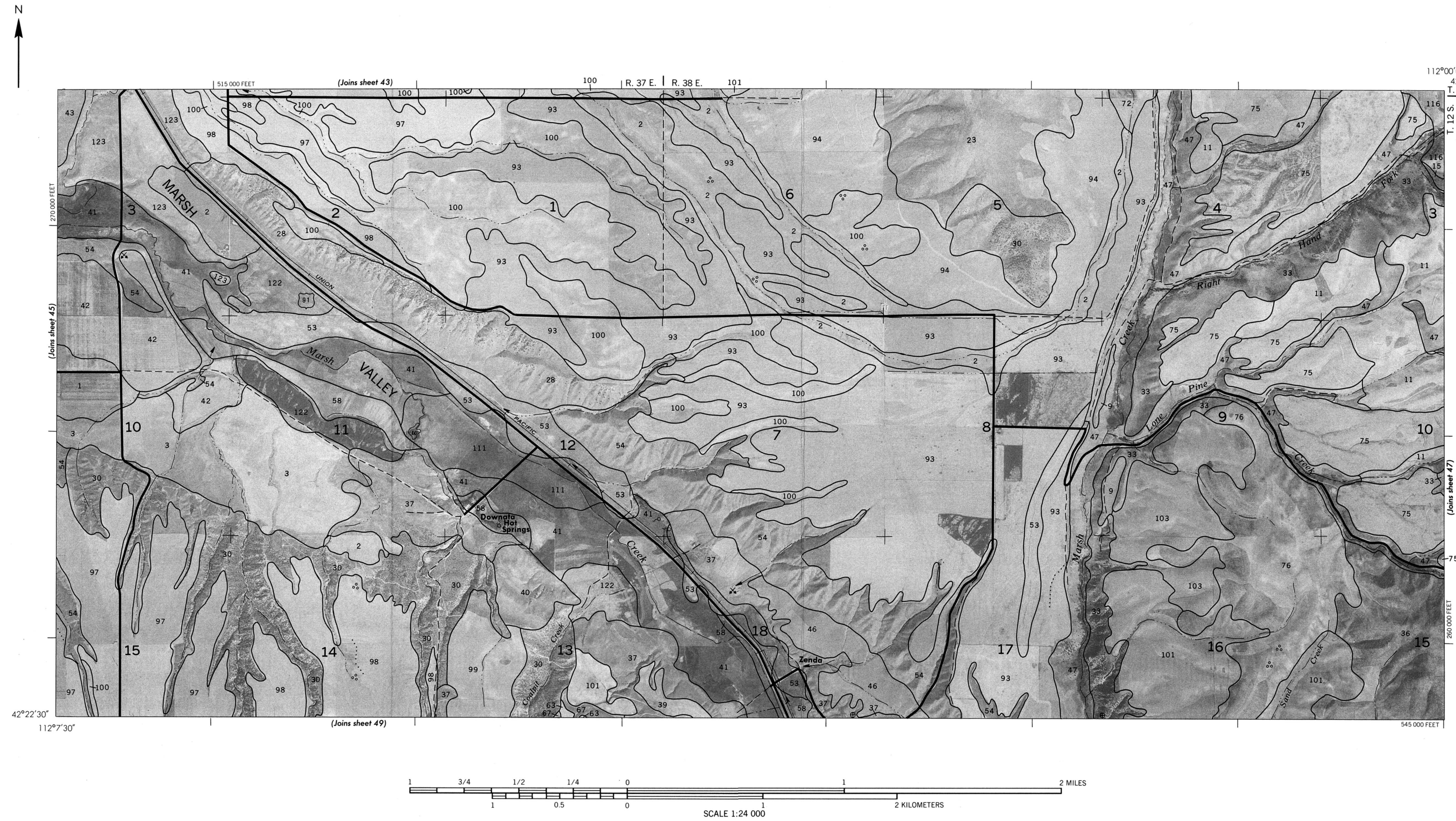
SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 45

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 45

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.



SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 46



SCALE 1:24 000

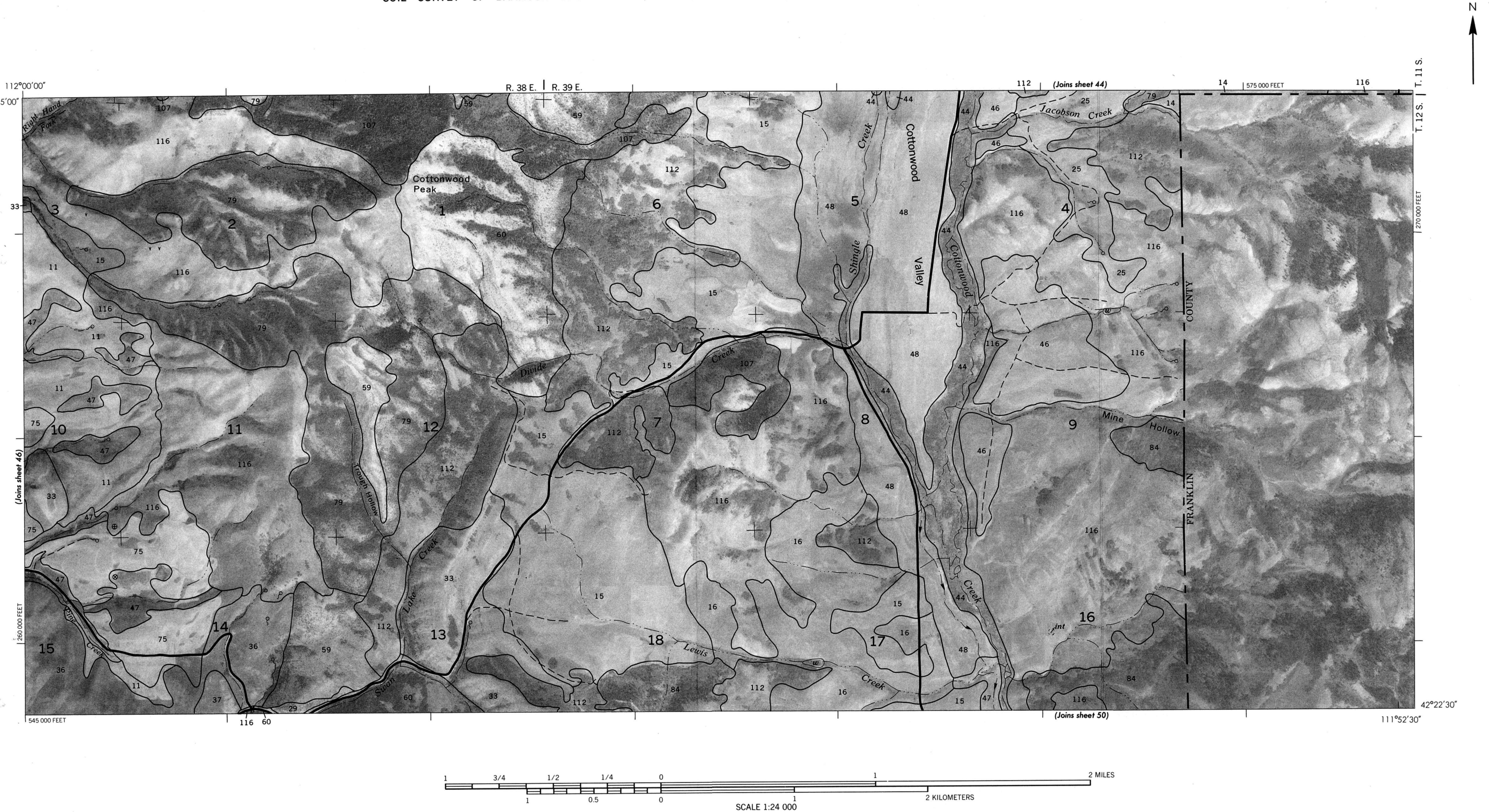
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.

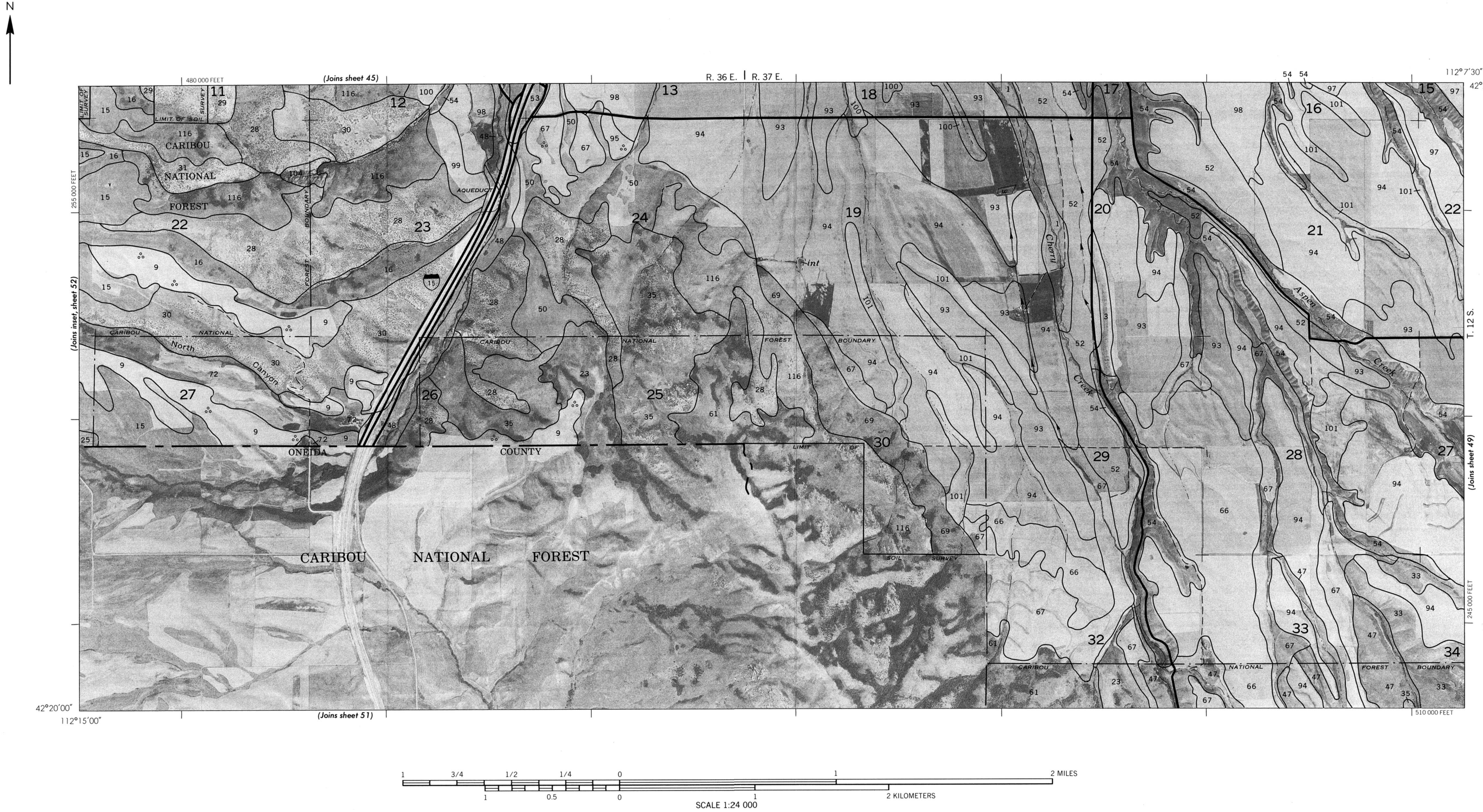
BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 46

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 47



48

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 48

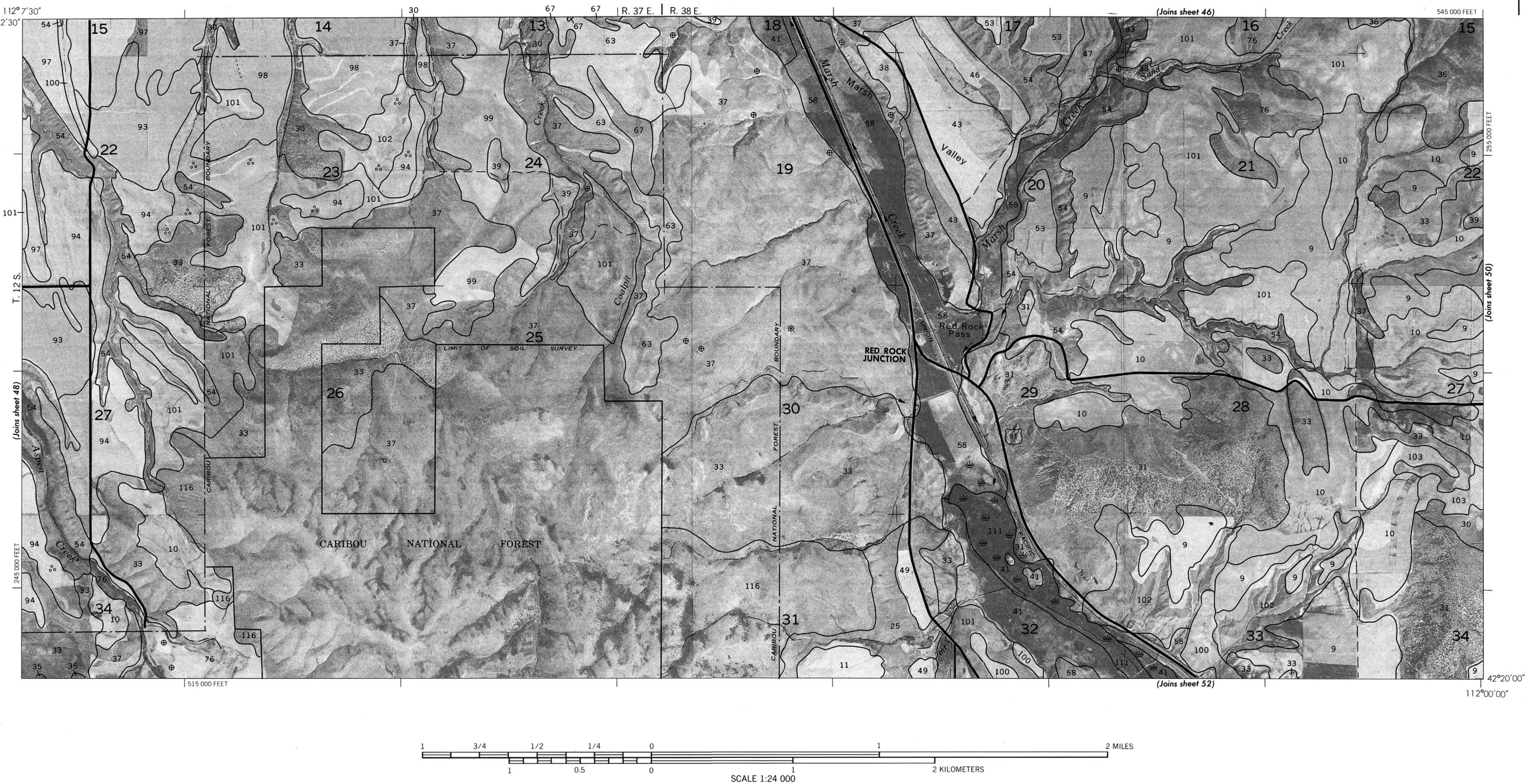


BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 48

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 49

BANNOCK COUNTY AREA. IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 49

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.



SCALE 1:24 000

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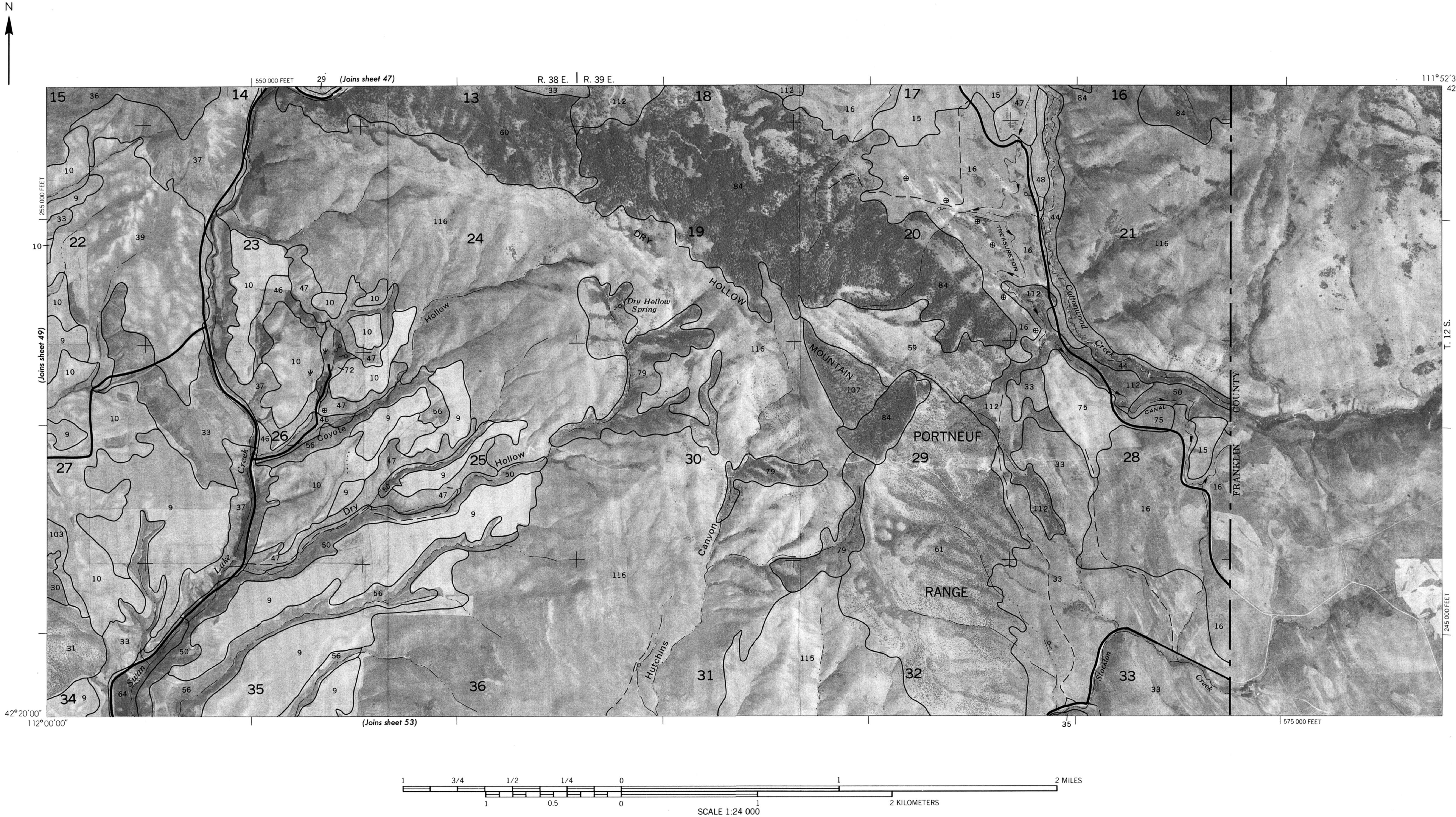
SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 50



Coordinate grid ticks and land division corners, if shown, are approximately positioned.

Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.

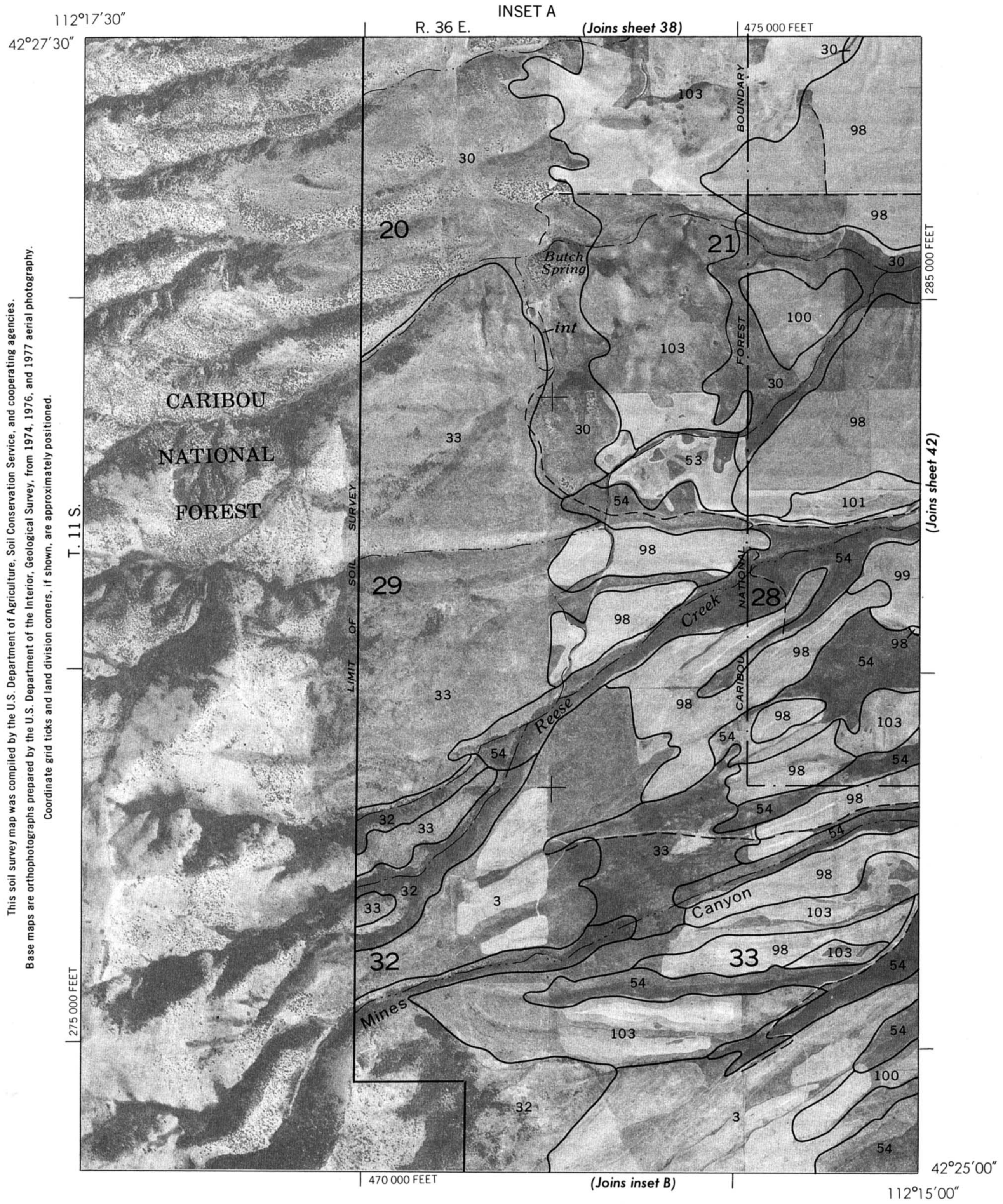
This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.

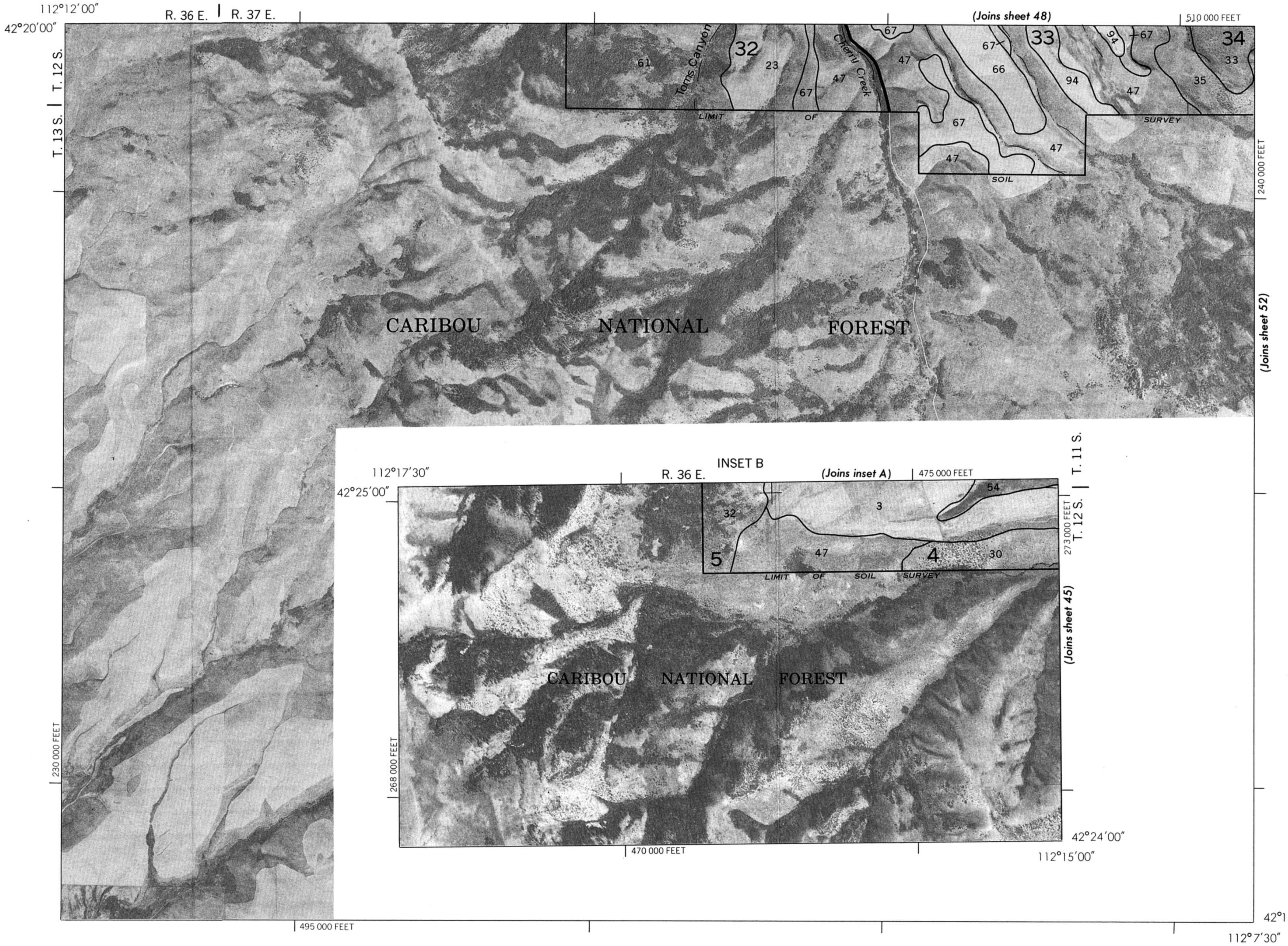
BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 50

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 51

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

INSET A





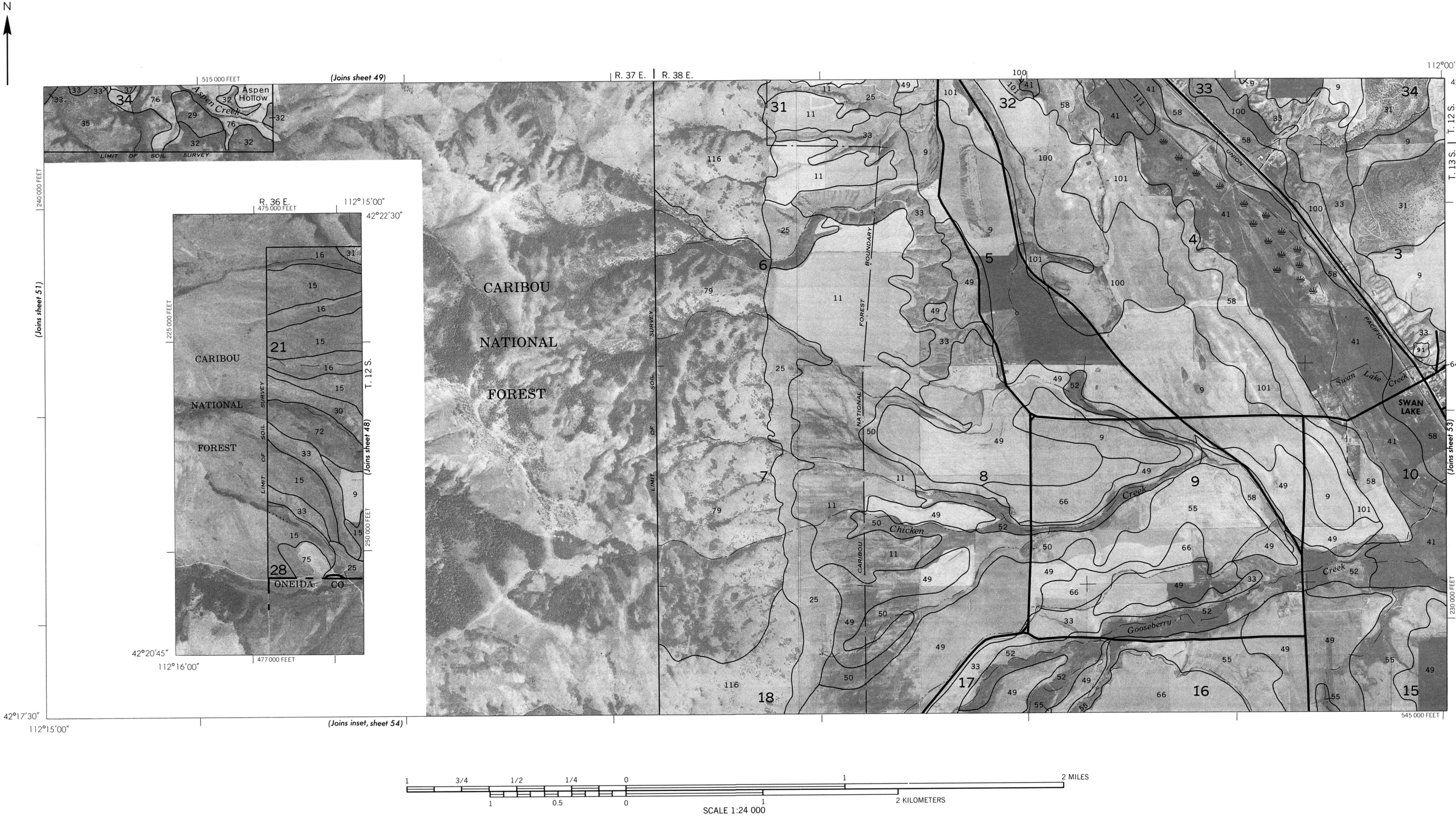
N

1 3/4 1/2 1/4 0 1 2 MILES

1 0.5 0 1 2 KILOMETERS

SCALE 1:24 000

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 52



Coordinate grid ticks and land division corners, if shown, are approximately positioned.

Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.

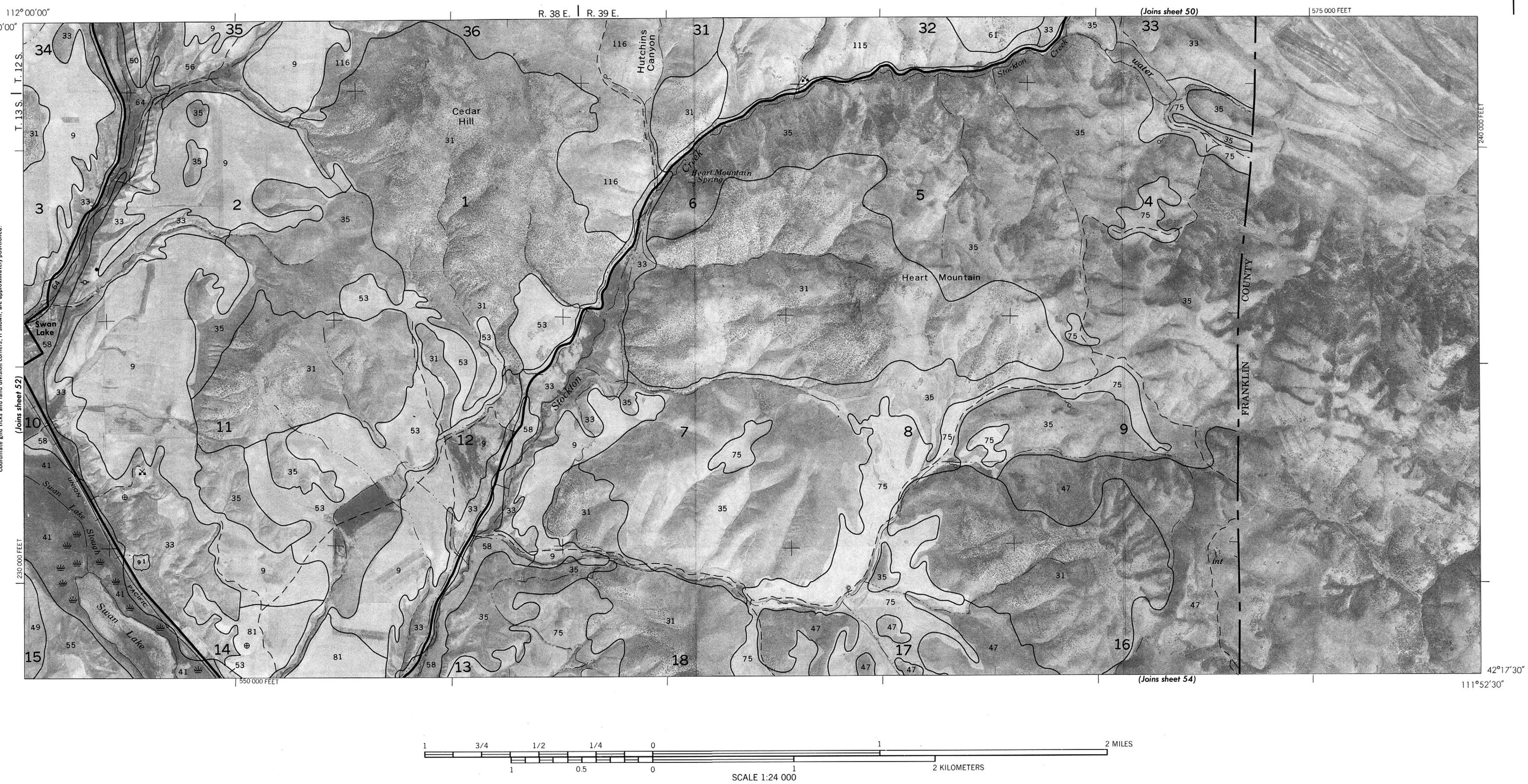
This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 52

SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 53

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 53

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.



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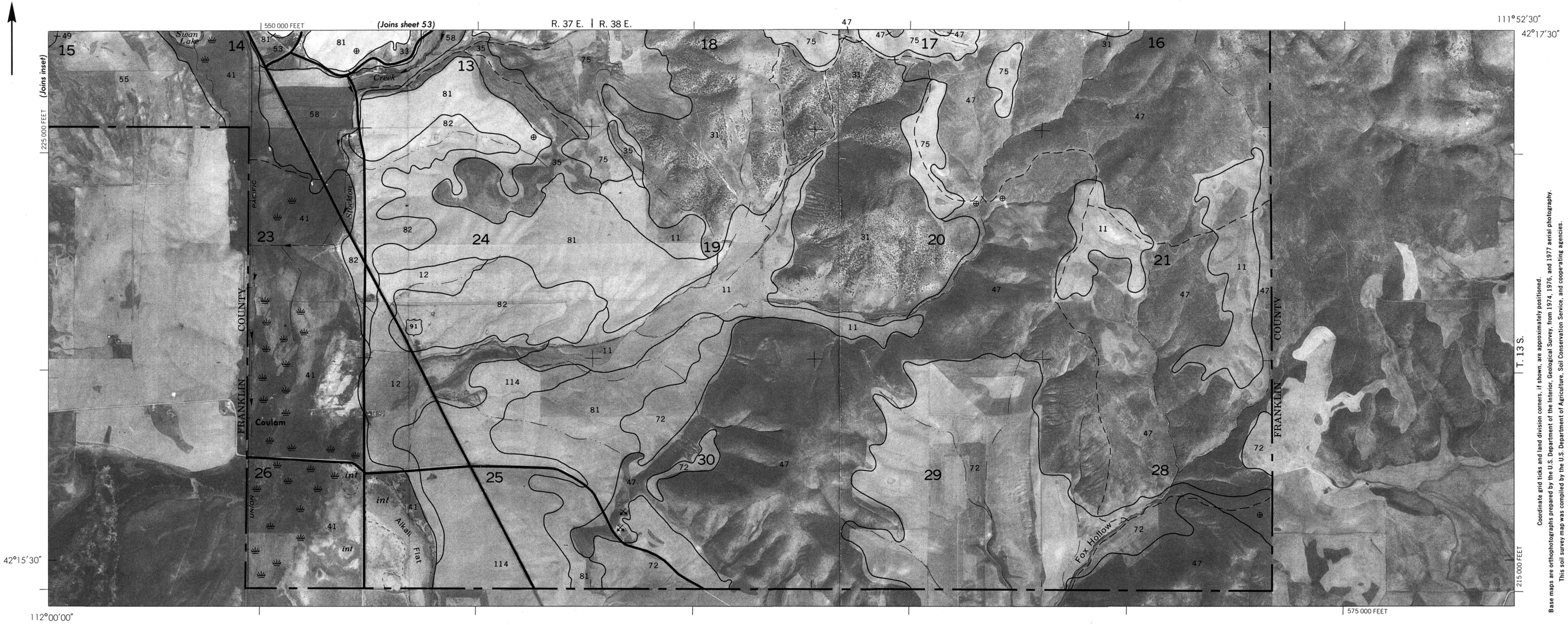
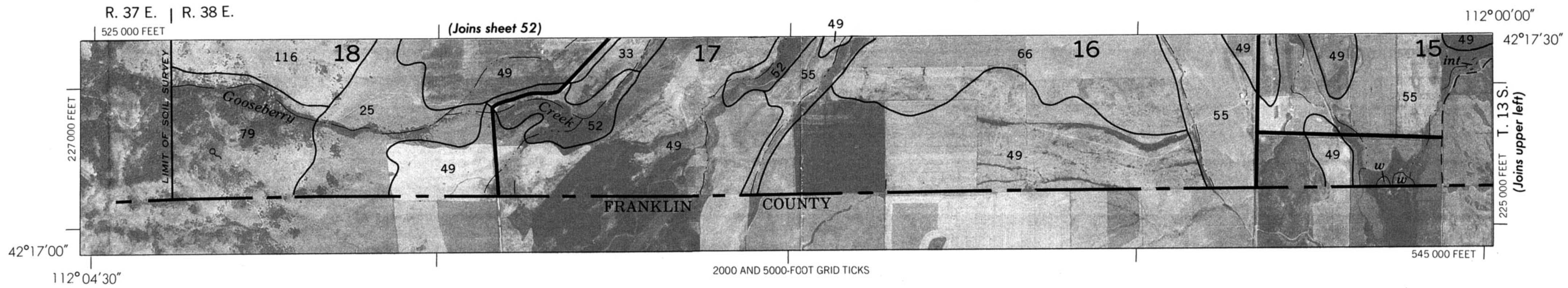
SOIL SURVEY OF BANNOCK COUNTY AREA, IDAHO, PARTS OF BANNOCK AND POWER COUNTIES — SHEET NUMBER 54





2000 AND 5000-FOOT GRID TICKS

Coordinate grid ticks and land division corners, if shown, are approximately positioned.
Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1974, 1976, and 1977 aerial photography.
This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.

BANNOCK COUNTY AREA, IDAHO PARTS OF BANNOCK AND POWER COUNTIES NO. 54